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ORIGINAL LECTURES.

EPITHELIAL CANCER OF THE EYELID.

A Clinical Lecture delivered at the Cincinnati Hospital.

BY ROBERT SATTLER, M.D.,
OF CINCINNATI, OHIO.
(Reported by C. H. CASTLE, M.D.)

GENTLEMEN: I desire to call your especial attention to the following cases, as they represent several clinical and histological varieties of a most interesting affection, the discussion of which will occupy our attention this morning. These cases represent so fairly the types you will find described in your books, that no doubt many of you can surmise from your seats the nature of the disease. It is known to the surgeons of this country as epithelioma; in England it frequently takes its name from the locality in which it is found, as, for instance, "smoker's cancer" when found upon the lip, "chimney-sweep's cancer" when found upon the scrotum. To the French it is known as "fragile cancer," a term descriptive of one of its chief physical characteristics in most cases, and by the Germans it is called epithelial carcinoma or cancroid.

Epithelioma may be described as a neoplasm which histologically has a distinct epithelial type, and which consists chiefly of tissue composed of one of the varieties of epithelial cells. The latter are embedded in a more or less vascular stroma composed either of adult, embryonal, or mucous connective tissue.

Clinically, and this applies also to the lids and the orbital cavity, we can make two grand divisions of this cancer into *superficial* and *infiltrating*, which two divisions again present varying characteristics and appearances which claim recognition and description.

This old man, a Swiss, aged 69, presented himself at my clinic two weeks ago, exhibiting what was at once recognized—the diagnosis being verified by microscopic examination—as a superficial epithelioma at the outer canthus of the left eye. According to his account, it had appeared as a small, round, whitish, slightly elevated patch some fifteen years before. Subsequently papules of a waxy hue developed, forming a growth of an oval form. When the size of a half dime the centre became depressed, and the surrounding border nodular. Eventually ulceration began in this central depression and at times a thick scab would cover the ulcerated surface. The only subjective symptoms that he complained of were the needle-like pains that occasionally passed through the growth and the discomfort that it occasioned to his eye, for, as you will see, peripheral cicatrization has caused a decided degree of ectropium of the lower lid. When he was first examined the diameter of the growth measured 10 by 17 mm. The treatment adopted in this case has resulted so favorably, that no correct conclusion can be formed from the present smoothly cicatrized appearance, of the dimensions of the growth before operation.

Besides the flat variety of superficial, or so-called lobulated pavement epithelial cancer, of which this old man presented a most typical example, we find other varieties the clinical characteristics of which we must bear in mind, in order, in many cases, to arrive at a correct diagnosis. Sometimes the infiltration presents a distinctly warty appearance, in others the external cells undergo an absolute cornification and we find the growth assuming the shape and appearance of a projecting horn, a most excellent example of which was observed recently. In this case a large horny outgrowth was removed from the right lower lid and cheek, measuring an inch in length and some three-quarters of an inch in diameter at its base. Again, but rarely, we find them in a condition of calcification and an abundant deposit of lime salts takes place in the older parts of the growth.

A not infrequent form of the superficial epithelioma is what is known as the cicatricial variety. The infiltration breaks down in patches or involves a large area of the growth and bands of cicatricial tissue traverse it in various directions, producing the well-known deformity of irregular scar-tissue.

A very characteristic form of this first or superficial type is the rodent variety. The term rodent ulcer and its synonymes, "Jacob's ulcer of the eyelids," etc., are familiar to all of you. By most authorities of weight, this "ulcer" is recognized as a rodent form of epithelioma. It is a rapidly progressive and eminently destructive process, which appears engrafted on the specific growth. It assumes a definite plan of advance, often a circular, circinating, or scalloped border marking its progress. From its malignancy and its rapidly destructive course, it is much to be dreaded, and what is perhaps peculiar, it betrays an affinity rather for the superficial than for the infiltrating variety. Leading the advance of this rodent ulcer is a growth of waxy nodules; the ulceration itself progressing by excavating the wall of its advancing border, presenting to the eye and touch a clean, glazed surface, and followed in its march by a peculiar, thin, white, glistening cicatrization, which, once seen, is never forgotten. In addition to the rodent, the superficial may manifest the papillomatous variety —papillæ-like prominences covered with irregular fringe-like projections.

In this woman, a German, aged 62, I present to your notice a typical example of the second or infiltrating variety of epithelioma. This begins generally as a superficial nodule. If, however, the starting-point is from the glandular structures—sebaceous, sweat gland, etc.—of the skin, it may appear in the form of a deep infiltration. Its course may be slow or rapid; it may assume a rodent or papillomatous characteristic. It may destroy the bones of the orbit and result in frightful deformity. In this case the disease is of twenty-two years' duration; it has resulted in complete destruction of the lower lid and has invaded the superficial and deep structures of the cheek and nose. The upper part of

the left lateral cartilage of the nose is gone and the left ala drawn up, and the upper lid of the same side bound firmly down by peripheral contractions.

Her general health is good. The proximal lymphatics are not implicated. Lancinating or needle-like pains constitute her chief complaint. Not infrequently this form assumes a papillomatous type and presents a peculiar soft warty or fringe-like development.

I have here in alcohol the eye and tumor of a patient aged 62. An extensive operation was performed about six months ago. It consisted in a thorough extirpation of all the contents of the orbit and a thorough scraping and denudation of its bony walls. In this case fungoid masses were found over the entire growth, which had destroyed the lower and three-fourths of the upper lid, and had in addition attacked the cheek, the globe, and the bony walls. The eyeball was rigidly fixed by firm and unyielding adhesions to the upper and inner wall of the orbit.

This second photograph illustrates to you an extensive rodent form of ulceration engrafted on the infiltrating variety.

It has been in progress for thirty years. The destruction is very extensive. The contents of the orbit, even the bony walls and the entire right side of the face, soft structures and bone, have been involved in the steadily progressing destructive disintegration. No implication of the proximal glands, no hemorrhage or excessive pain, and no constitutional disturbance has so far resulted. The upper and inner portion of the orbital cavity is studded with gelatinous granulations and a tumor, most probably a meningocele, exists.

Pathologically, we can recognize three varieties of epithelioma—the pavement cell cancer, the cylindrical cell cancer, and, according to German authorities, a third, rare form, the glandular cell cancer.

Under the microscope, the pavement cell cancer is recognized by certain characteristic appearances. Taking a section through the epidermis, the rete mucosum and the derma, we find that in the papillary layer of the skin a cell evolution is going on, the process apparently being the reverse of that which takes place in the normal development of the epidermis. At the periphery of the new tissue we find small, cylindrical nucleated cells—the succeeding cells are larger, cubical, or flat, while the most internal cells are concentrically laminated about a centre and flattened to the highest degree. These are the "nests," "pearl globules," or "globes epidermique."

Sometimes we find these flattened cells grouped in lobules or packed in long irregular shaped tubules, and from these appearances are made two divisions of the pavement cell cancer: the superficial lobulated and the deep or tubulated.

The arrangement of the cells in a cylindrical cell cancer corresponds to the normal arrangement of cylindrical epithelium—it is single celled. The cells, however, are perhaps larger and less regularly cylindrical —those in the centre of the growth may even be round. The stroma of both pavement and cylindrical cancers is composed of adult or embryonal connective or mucous tissue, and may be found combined in the same growth. It is very vascular, its bloodvessels, however, not penetrating in among the epithelial elements.

These growths have decided preferences as to habitat. The face is a favorite seat and particularly the junction of a mucous and cutaneous surface. In the order of their frequency of attack we find first, the lower lip, then the nose, cheeks, eyelids, brow, temporal region, upper lip, chin and ear. Histologically the sebaceous, sweat, and lymphatic glands and the connective tissue can all be looked upon as starting points.

As to the etiology of epithelial cancer, we have very little positive knowledge. We know that it is usually a disease of advanced life, that it in many cases, but not by any means invariably, is the result of a local irritation. Beyond this we cannot go. Some eminent pathologists maintain that a cancerous diathesis must exist in the individual, others that it is merely the local result of some long-continued irritation.

The course of the disease is exceedingly variable, and, of course, much influenced in many cases by prompt and energetic treatment. We will undoubtedly find many cases dragging on ten, fifteen, twenty years or longer, and evincing no particularly malignant symptoms, while others terminate by exhaustion or hemorrhage in a comparatively short period.

The diagnosis does not present many difficulties. From lupus ulcer it can be differentiated usually by its color, by the tubercular appearance of lupus, sometimes by the discharge in the latter and by the microscopic appearance. From a chancre it can be differentiated by the amenability of the latter to antisyphilitic treatment. From other varieties of cancer by its appearance at its favorite sites and by its non-involvement of the proximal lymphatics.

A certain and never-failing source of diagnosis is the microscopic appearance of the growth.

When we turn to surgical or dermatological authorities for methods of treatment of epithelioma we find a surprising unanimity of opinion. Almost without exception we find that excision and the caustics occupy their highest estimation. The author of the chapter on diseases of the lids, Michel, in Gräfe and Saemisch's *Handbook of Ophthalmology*, also assigns the first place to excision and the caustics, and only refers briefly to the method of scraping suggested by Volkman, of Halle, Germany.

Hebra, Kaposi, Neumann, Auspitz, and also Duhring, refer to this method, without, however, assigning to it better or more satisfactory results or advantages over the methods already referred to. All the text-books on the eye either do not refer to it at all or give it only a brief notice. A recent text-book by Juler, of London, England, is, perhaps, the only exception.

The method which I have adopted in these and other cases, with most gratifying results, consists in the use of a small but strong steel curette or scraping-spoon. To be followed by good results, it must be resorted to in a thorough manner, and *all suspicious-looking or fragile tissue* must be removed. The hand, by the sense of resistance, easily determines when the cancerous tissue has been removed and the instrument is in contact with healthy tissue. This applies particularly to the superficial (cutaneous) forms of the disease, and, if it has invaded only the skin, this method will, in almost every case, effect a satisfactory disappearance. In the deeper forms, to be effectual, it must be resorted to more radically, and in many cases the knife and bone gouge are necessary in addition.

In the case of the old man, there has been but one scraping; the result has been most satisfactory. The parts were pencilled with a four per cent. solution of cocaine, and the pain attending the operation was greatly reduced. Cold applications were made, and no local reaction or pain resulted, and a superficial and regular cicatricial covering exists. In the case of the woman the disease had progressed beyond the power of the curette, the knife, and the various caustics to eradicate it, but, beyond doubt, for the past two years, during which she has been a weekly attendant at my clinic, it has been greatly held in check; hemorrhage has been prevented, pain made to disappear, and these results, most excellent for this case, have been accomplished solely by the use of the scraping method.

The advantages of this method in the locality of the lids over excision, the use of the various zinc, arsenic, and caustic potash salves and pastes, the mineral acids, or the actual, thermo or galvanic cautery, etc., are, first, over excision, that the defect is not larger nor deeper than the infiltration and that plastic operations are not necessary to cover the defect; over the caustics, that the adjoining healthy regions are not implicated and the pain is much less. This applies to the various caustic pastes and galvanic or thermo-cautery. The chief advantages of the scraping method in those cases in which it is applicable—*i. e.*, all the superficial and some of the infiltrating forms—are the simplicity and ease of this method compared with others; the healthy tissues are but slightly or not at all disturbed, little or no danger from inflammatory reaction or pain after the operation, the formation of a superficial cicatricial covering and therefore either less or at least no greater deformity than existed before the operation.

These are advantages which cannot be overestimated when compared with the risks attending excision and plastic operations in this locality, or the pain and protracted ulceration which may invade the adjoining territories when caustics are chosen as the curative agents.

This remark is based upon a large number of observations, extending over a period of years and applies particularly to epitheliomata of the eyelids. It has yielded, in my experience, the most gratifying results, and I do not hesitate to recommend it to you as the method in a large number of cases which you can adopt with better prospects of success than all other surgical or caustic methods, either separate or combined.

ORIGINAL ARTICLES.

DISINFECTANTS.

PRELIMINARY REPORTS OF THE COMMITTEE ON DISINFECTANTS OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

INTRODUCTION.

AT the recent meeting of the American Public Health Association, held in St. Louis, Mo., October 14–17, 1884, Dr. James F. Hibberd, of Indiana, introduced resolutions calling for the appointment of a committee to investigate the subjects of "disinfectants, germicides, and antiseptics," and formulate the results of their research, so as to make the existing knowledge on these topics available for professional and popular use. This is the purport of the resolutions which were adopted by the Association. A Committee was accordingly appointed, consisting of Major George M. Sternberg, Surgeon U. S. Army, Baltimore; Dr. J. H. Raymond, Professor of Physiology and Sanitary Science in Long Island College Hospital, and Health Commissioner of the city of Brooklyn; Dr. Victor O. Vaughan, Professor of Chemistry in the University of Michigan; Dr. W. H. Watkins, Medical Director of the Auxiliary Sanitary Association of New Orleans; Major Charles Smart, Surgeon U. S. Army, Washington; Dr. A. R. Leeds, Professor of Chemistry in Stevens' Institute of Technology, Hoboken; and Dr. George H. Rohé, Professor of Hygiene in the College of Physicians and Surgeons, Baltimore.

At a meeting of the Executive Committee of the American Public Health Association, held in Washington on December 11, 1884, the Committee on Disinfectants was authorized to publish and make available to sanitarians and the public the results of its labors at as early a date as practicable, in view of the possible invasion of this country by cholera during the coming summer. A preliminary statement of the work of the Committee has already been made to the Conference of State Boards of Health, in session in Washington, December 11 and 12, 1884.

In order to be enabled to pursue a thorough scientific research, the Committee, after consultation, decided to appeal to city and State boards of health, and to sanitary associations for financial aid. Responses to this appeal have been encouraging, and the Committee flatters itself that the work now in progress will yield results of very great practical value.

A complete investigation of both disinfectants and antiseptics being impracticable in the time and with the resources at command, the Committee decided upon so far departing from the letter of the resolutions of Dr. Hibberd, as to limit its inquiry altogether to disinfectants, and to omit all investigations into the action of antiseptics. The Committee would define a disinfectant as an agent capable of destroying the infective power of infectious material. In its experimental investigations, the Committee has adopted the biological test upon known disease germs or allied organisms. The details of the methods pursued will be given by Dr. Sternberg in a subsequent paper in this series. Provisionally, it may be stated that in the experiments material containing zymogenic or pathogenic organisms is exposed for a definite time to the action of a measured quantity of the supposed disinfecting agent. If the vitality of the test-organism is destroyed, if it is rendered incapable of subsequent reproduction or development when placed under favorable conditions, the test is regarded as satisfactory. If, however, the organism should grow, subsequent to its exposure to the agent to be tested, disinfection has not followed.

At a meeting held in Baltimore on November 20th, the Committee was divided into two sub-committees, one consisting of Drs. Sternberg, Smart, and Rohé,

to examine the literature of disinfectants, and abstract and tabulate the results, and to investigate in an exact manner in the laboratory the relative germicidal value of the various substances used as disinfectants. The latter part of the inquiry is exclusively under the direction of Dr. Sternberg, the Chairman of the Committee, who has been granted exceptional facilities for carrying on this work in the biological laboratory of the Johns Hopkins University in Baltimore.

The second sub-committee consists of Professors Raymond, Vaughan, and Leeds, and Dr. Watkins, and will have especially to investigate the practical application of such disinfectants as are found efficient, upon a large scale, their cost, methods of use, chemical relations, effects upon furniture or fabrics, or their possibly poisonous effects upon human beings or animals. Preliminary reports from members of this sub-committee will also appear in this series of papers.

In this way, the Committee hopes to fulfil the expectations of the American Public Health Association and others interested, and to render available, before the arrival of the next epidemic season, all knowledge of practical value upon the important subjects of disinfectants and disinfection.

The Committee considered it unnecessary to make any original experiments at present upon the disinfecting powers of the haloid elements—chlorine, bromine, and iodine. In accordance with a suggestion of the Chairman, the writer presents herewith the results of an examination of the recent literature upon the disinfectant action of these substances.

I.

CHLORINE, BROMINE, AND IODINE.

BY GEORGE H. ROHÉ, M.D.,
PROFESSOR OF HYGIENE IN THE COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.

Chlorine.—The most thorough and exact research into the disinfectant powers of chlorine on record, is that made by Fischer and Proskauer, and published in the second volume of *Mittheilungen aus dem Kaiserlichen Gesundheitsamte.* The material tested consisted of the spores of bacillus anthracis, spores of the various forms of bacilli found in ordinary garden soil, micrococcus tetragenius, micrococcus prodigiosus, bacillus of septicæmia of mice, bacillus of septicæmia of rabbits, aspergillus nigrescens and aspergillus ruber, micrococcus of erysipelas, sputum of tuberculosis, bacillus anthracis, bacterium of fowl-cholera, and various other non-pathogenic microörganisms.

The observations were made both in dry air and in air artificially moistened, and the objects to be disinfected were sometimes exposed in a dry, sometimes in a moist condition. The concentration of the gas varied from 1 part in 25,000 to 1 part in 2¼, The time of exposure in the different experiments varied from one to twenty-four hours.

Anthrax spores when thoroughly desiccated and exposed to the action of a dry chlorine atmosphere containing 44.7 parts of chlorine in 100, resisted the disinfectant action of the agent completely for one hour. After three hours' exposure, germination was still free, but somewhat retarded. After twenty-four hours' exposure, disinfection was complete, the vitality of the organism being entirely destroyed.

When the air in the experimental chamber and the spores were moistened, one hour's exposure to an atmosphere containing four per cent of chlorine was sufficient to produce complete disinfection. If the exposure was continued for three hours, one per cent. of chlorine was an efficient disinfectant; and if the spores were exposed for twenty-four hours, the effective proportion of chlorine could be still further reduced, if the air and objects to be disinfected were first rendered moist.

Bacillus anthracis itself was killed in moist air, if chlorine was present, in the proportion of 1 part in 2500 after twenty-four hours' exposure. Even with such a minute proportion of chlorine as 1 part in 25,000, the development of the organism was scanty and retarded.

Spores of the various forms of bacilli found in ordinary garden soil proved a little more resistant to the action of the chlorine. When the air in the experimental chamber was very moist, however, the presence of one per cent. of chlorine, and upwards, rendered the spores incapable of development after three hours' exposure. When the chlorine strength was four per cent., one hour's exposure was sufficient to destroy the germinative power of these spores.

Micrococcus tetragenius was killed in moist air by the presence of so small a proportion of chlorine as 1 in 25,000, if the exposure was prolonged to twenty-four hours. Exposure for less than three hours was not sufficient to destroy the life of the organism in all cases.

Micrococcus prodigiosus, and several other varieties of pigment-forming micrococci, showed themselves generally more resistant to the disinfectant than micrococcus tetragenius. In other respects, they behaved similarly, exposure for upwards of three hours being sufficient to destroy them in the presence of over four per cent. of chlorine.

Aspergillus nigrescens and aspergillus ruber were rendered incapable of further growth by exposure for one hour to moist air containing 1 part of chlorine in 25,000.

Micrococcus of erysipelas was killed by three hours' exposure to moist air containing 1 part of chlorine in 2500, or twenty-four hours' exposure to air containing 1 in 25,000.

Bacillus of septicæmia of mice was killed by exposure to an atmosphere containing from 3 to 40 parts of chlorine per thousand. The presence of 5 parts per thousand was effective after one hour's exposure in a moist atmosphere.

Bacillus of septicæmia of rabbits was killed by an exposure of twenty-four hours to 5 parts per thousand; and after one hour's exposure to 40 parts per thousand, but retained its infective properties after one hour's exposure to 5 parts per thousand.

Tuberculous sputum was disinfected after one hour's exposure to an atmosphere containing 5 parts of chlorine per thousand.

Bacterium of fowl-cholera was destroyed after exposure for twenty-four hours to a moist atmosphere containing 1 part of chlorine in 25,000.

Dr. G. M. Sternberg (*Report National Board of Health*, 1880, p. 320) tested the effect of chlorine upon dried vaccine lymph and the microörganisms of putrid urine. Six hours' exposure of vaccine lymph dried upon ivory points to an atmosphere containing 1 part of chlorine in 200, was sufficient to destroy the infective property of the lymph, as tested by subsequent inoculation. In one experiment, five points were exposed to an atmosphere containing 1 per cent. of chlorine; of these, four were disinfected, while the fifth furnished a satisfactory vaccine vesicle. The failure in this case is explained by Dr. Sternberg by the assumption of an unusually thick coating of dried lymph. In these experiments, control-inoculations with non-disinfected virus from the same packages were made in all cases.

The bacteria of putrid urine were destroyed after six hours' exposure to an atmosphere containing 1 part of chlorine in 400.

Braidwood and Vacher ("Report of Life-history of Contagium," *British Medical Journal*, 1876, vol. ii.) mixed liquid vaccine virus with equal parts of liquor chlori (B.P.), and completely destroyed the infectivity of the vaccine. The time of exposure is not stated.

Dr. E. B. Baxter (*Report of Medical Officer Privy Council*, 1875) tested the effect of chlorine on liquid and dry vaccine, and on the "virus of infective inflammation." The infectivity of the latter was destroyed by the presence of 8 to 15 parts of chlorine in 10,000. The time of exposure to the action of the disinfectant is not stated. The experiments of Dr. Baxter on vaccine lymph are not detailed with sufficient exactness to allow trustworthy conclusions to be drawn. He states, however, that "unless the chlorine was present in sufficient quantity to render the lymph acid, it had no effect."

Fischer and Proskauer, in addition to testing the influence of chlorine on micro-life, also exposed a number of fabrics, colored leather, and wearing apparel to the action of this agent. All the colored articles were either bleached or much altered in color. They conclude their elaborate memoir with the following observation:

Disinfection with chlorine is attended by great inconvenience, on account of the rapid evolution of the gas from the chlorinated lime and hydrochloric acid when mixed, and the very irritant action of the gas upon the mucous membrane of the larynx and of the eyes. Clothing is also liable to be discolored by the action of this disinfectant.

Bromine. — Fischer and Proskauer (*Ibid.*) also studied the effect of the vapor of bromine upon spores of bacillus anthracis, spores of garden soil bacilli, tuberculous sputum, bacillus anthracis, micrococcus prodigiosus, micrococcus tetragenius, micrococcus of erysipelas, aspergillus nigrescens, aspergillus ruber, and several other non-pathogenic organisms.

After an exposure of three hours in a dry atmosphere containing 3 parts of bromine vapor in 100, the anthrax bacillus, tuberculous sputum, and both aspergillus species were entirely disinfected. The spore-bearing organisms and the non-pathogenic micrococci retained their power of development, although generally in a diminished degree. After moistening the air in the experimental chamber to the greatest attainable degree, three hours' exposure to an atmosphere containing 1 part of bromine in 500 acted as a thorough disinfectant; if the exposure was prolonged to twenty-four hours, 1 part in 3500 was efficient. When the proportion of bromine was reduced to 1 part in 16,000, exposure for twenty-four hours failed to disinfect spore-bearing organisms.

Upon the whole, bromine did not prove as prompt a disinfectant as chlorine, besides being very difficult and dangerous to handle.

Iodine.—The disinfecting power of iodine has been determined by Dr G. M. Sternberg (*American Journal of the Medical Sciences*, April, 1883). He experimented upon the micrococci of pus and of septicæmia, bacterium termo, and the organisms found in broken-down beef-tea. An exposure of two hours to the disinfectant in solution, in the proportion of 1 in 500, was effective in destroying the vitality of all of these organisms.

Salmon (*Report of United States Department of Agriculture*, 1883) experimented on the micrococcus of fowl-cholera, and found iodine an efficient disinfectant in the proportion of 1 part in 1000.

Summing up briefly our knowledge upon this subject, the following conclusions seem to be justified:

1. Chlorine is an efficient disinfectant when present in the proportion of 1 part in 100; provided the air and the objects to be disinfected are in a moist state, and the exposure continues for upwards of one hour.

2. Chlorine, when used in sufficient concentration to act as a trustworthy disinfectant, injures colored fabrics and wearing apparel.

3. Bromine is an efficient disinfectant in the proportion of 1 part in 500; provided the air be in a moist state, and the exposure continues for upwards of three hours.

4. Iodine, in solution, is an efficient disinfectant in the proportion of 1 part in 500; the exposure continuing for two hours.

5. The use of chlorine, and in a greater degree of bromine, requires considerable experience in management; when carelessly handled they may cause inconvenient or even dangerous symptoms in persons using them; for these reasons they are not suitable as disinfectants for popular use.

ON SURGICAL TUBERCULOSIS.*

BY R. J. HALL, M.D.,
OF NEW YORK.

SINCE Koch's announcement of the discovery of the bacillus tuberculosis,[1] the medical press has devoted more time to this subject than perhaps to any other in the whole range of medical science. To those who had not followed the steps by which the problem had been brought day by day nearer to its solution, Koch's announcement seemed either an audacious theory, opposed to the results of all previous clinical and pathological research, or a stroke

* An Inaugural Thesis read before the New York Surgical Society, Nov. 11, 1884.

of genius, answering at once the question which had baffled all others.

Many, however, who had followed the subject from the beginning, saw in Koch's discovery but the absolute proof of that which, on other grounds, they had long held to be practically certain.

Although, on account chiefly of the immediate value of the discovery for diagnostic purposes in diseases of the lungs, most of the recent contributions have had reference to cases lying rather in the domain of medicine than of surgery; yet the latter has been by no means entirely neglected. In this country, however, the recognition of the tubercular nature of many surgical affections has been extremely slow. Thus, while so great an authority as Koenig, in Germany, does not hesitate to say that the surgeon, when speaking of chronic inflammation, scarcely thinks of anything but tubercular disease,[2] in an edition so recent as 1883, of a widely read American work on diseases of the joints, tuberculosis is not mentioned as a factor in pathology or etiology; and it is not too much to say that numbers of surgeons of considerable experience never get beyond the terms "strumous" or "scrofulous" in their diagnosis of these same affections.

I do not hesitate, therefore, to present the results of my own examinations of material from cases of surgical tuberculosis with reference to the presence and histological relations of the bacillus. It will be necessary first to sketch briefly the arguments which, in my opinion, render the mycotic origin of tubercle an established fact in medical science, and no longer a mere theory. The subject has been so conclusively dealt with by Koch himself[3] that but little is left except to give a résumé of the argument as presented by him.

The idea that tuberculosis is an infectious disease is by no means new. Klencke, as has been pointed out by Spina[4] and Koch,[5] first successfully inoculated animals with human tuberculosis in 1843. Villemin, however, was the first to attract general attention to the subject by a series of successful inoculations, accompanied by a number of carefully conducted control-experiments, with non-tubercular material, the latter giving always negative results.[6]

At first these views were received with general favor, but soon a large number of experimenters announced that they had arrived at very different results—that inoculations with the most varied non-tubercular animal and vegetable substances, also produced tubercular lesions, especially in animals predisposed to the disease. Among these the reports of Burdon Sanderson,[7] Wilson Fox,[8] and Cohnheim and Frankel[9] may be mentioned as having appeared especially conclusive, and having been most extensively quoted.

When these experiments, however, are examined in detail they are found, as has been well pointed out by Raymond and Arthaud, in an exhaustive article on the subject,[10] to have fallen into errors due to neglect of precautions especially insisted on by Villemin. It is unnecessary now to discuss the cause of failure in those cases in which tubercular material was inoculated and no tuberculosis produced, since not the strongest opponents of the theory of a specific poison would now deny that tuberculosis can be produced by inoculation with tubercular material. In those cases in which it had been alleged that tuberculosis has been produced by inoculation with indifferent non-tubercular substances, the observers have sometimes trusted to the macroscopic appearances, calling any nodules found on autopsy of the animals experimented on tubercles. In this way the nodules in the livers of rabbits due to the eggs of strongylus, tænia, and other parasites, and so common that in three hundred otherwise healthy rabbits examined by Raymond and Arthaux,[11] almost all contained them, have undoubtedly been taken for miliary tubercles; and the same has probably been the case with small foci of broncho-pneumonia and miliary abscesses in the lungs in experiments by inhalation. Or, the observers have depended on an insufficient histological examination of the inflammatory products; or, perhaps, the most frequent error of all, they have operated with a total neglect of all precautions in selecting healthy animals, having clean knives, hands, and operating rooms, keeping the animals separated from others already infected and under good hygenic conditions. No single observer has yet inoculated animals with non-tubercular material, using the necessary precautions mentioned above, produced a progressive tuberculosis, and *proved that it was tuberculosis by further inoculations* in series on other animals; yet nothing less than this would be necessary to outweigh the overwhelming evidence on the other side, for all this can be accomplished with certainty by the use of tubercular material. It is important, also, to note that Cohnheim, feeling doubtful of the reliability of his own experiments in the crowded and dirty laboratories in Berlin, repeated them in Breslau, with proper precautions, using chiefly the anterior chamber of the eye for inoculations, and with entirely opposite results, producing tuberculosis invariably with tubercular material, and never with any other;[12] and recently Dr. Dawson Williams, at the request of Drs. Sanderson and Wilson Fox, repeated their experiments, using every precaution against accidental infection, and also with entirely negative results. These experiments were controlled by Dr. Wilson Fox himself, who was present when Dr. Williams read his paper.[13]

Among many others who have made extensive observations, with the same results, may be mentioned H. Martin,[14] P. Baumgarten,[15] K. Schuchardt,[16] Damsch,[17] Tappeiner,[18] Dieulafoy et Krishaber,[19] and Koch himself.[20]

Having been led to the conclusion, on the above and other grounds, that tuberculosis was possibly due to a specific poison of a parasitic nature, the steps pursued by Koch,[21] as described by himself, were as follows: First, to determine whether in tubercular tissues elements occurred foreign to the tissues and not produced by them; second, having found such elements, to prove that they were living organisms, which could be distinguished from others of the same family, and capable of indefinite multiplication; third, to show that tissues containing these organisms, as we may now call them, when used for inoculation produced the disease, and that no other tissues

did so; fourth, to cultivate these organisms on suitable soil and with suitable precautions against contamination, through successive generations, until it was absolutely certain that none of the original material was present, and with these pure cultures to produce the same disease; and, lastly, to show by a sufficient number of control-experiments that inoculation with indifferent substances never does produce tuberculosis. All this has been accomplished by Koch with marvellous accuracy and minuteness of detail, in such a way as not to leave a loophole of escape from his conclusions. His experiments and observations extended over hundreds of cases, with the most uniform results. As has been well said by a recent reviewer, "It is fair to predict that among the future assailants of Koch's work, there will be very few men of judgment who have read the work in the original."[22] As for the various attacks that have been made upon Koch, they have been so conclusively answered by himself that it is scarcely necessary to do more than refer to his own article in answer to his opponents.[23]

It is worthy of note that among the numerous adverse critics, with the exception of some quite inconclusive inhalation-experiments by Balogh[24] and Schottelius,[25] only two, Spina and Formad, claim to have repeated Koch's work. Spina's[26] two or three experiments fail so utterly to comply with the conditions necessary in such an investigation as to be absolutely puerile, and quite worthy of the contempt with which Koch treats them. While I cannot discover that Formad has made any experiments on the subject, except those implied in the statement[27] that almost all animals in laboratories acquire tuberculosis, no matter what operation has been performed on them, this, in the present state of scientific knowledge on the subject, produces, as a critic has remarked, somewhat the same effect on the mind of the reader as if a surgeon should say that pyæmia could not be due to a specific poison, because all the patients operated upon in his wards died of it. It is, perhaps, of purely historical interest that while Formad gives abnormal narrowness of the lymph-spaces as one of the anatomical causes of tubercle, Hunter had already suggested an abnormal wideness of the lymphatic system as the probable cause of the same.[28]

Assuming, then, as proved, the etiological relation of the tubercle bacillus to tubercular processes, let us consider what interest this has for surgeons. From a pathological point of view, the identity of the inflammatory products in the more important surgical diseases with the pulmonary tuberculosis of Bayle and Laennec, was very early recognized. Delpech[29] maintained the tubercular nature of Pott's disease, as did Nichet[30] very shortly after the publication of Laennec's views. Nichet also described cold abscesses, independent of bone disease, formed by the confluence and breaking down of tubercle. Nélation,[31] in 1836, describes tubercular osteitis, encapsulated and diffuse, its various terminations and the ways in which it affects the joints, almost as minutely as Koenig has done recently, in his admirable monograph on the subject.[32] All these investigations, however, were founded chiefly on the macroscopic appearance of the miliary tubercle. It was not until the description of the giant cell by Langerhans,[33] and the demonstration of epithelioid cells, surrounded by a fine reticulum, and forming a nodule, enclosing usually one or more giant cells, by Schüppel[34] gave a firm anatomical criterion for the diagnosis, that exact investigations could be made. Then followed the demonstration of tubercular disease in almost every tissue and organ of the body. Among the most important from a surgical point of view, the following may be mentioned: K. Köster,[35] in 1869, founding his conclusions on a careful examination of nine cases, first described miliary tubercles as a constant occurrence in fungoid joint diseases. Ranvier[36] had already described tubercular osteitis. Friedländer[37] found tubercles in caries of bone in scrofulous skin diseases, lupus, the os uteri, the wall of a mammary cyst, and other unexpected places. Schüppel,[38] in 1871, described tubercular lymphadenomata so minutely that pathologists have had scarcely anything to add and nothing to alter since, and declared the tubercle-like lymphadenomata of E. Wagner[39] to be really tubercle. Köster[40] found tubercles in fungoid osteitis and osteomyelitis, independent of joint disease, in almost every portion of the male and female genito-urinary tracts, in the larynx, the mamma, and the tongue. R. Volkmann,[41] in 1879, and Lannelongue,[42] in 1880, described in detail the tubercular character of cold abscess, the latter including those not dependent on tubercular disease of bone. G. Feurer[43] examined twelve cases of vertebral caries, and found nine certainly, the remaining three probably tubercular. Koenig[44] has recently called renewed attention to the frequently tubercular character of the common chronic hydrops of joints and sheaths of tendons, in the latter especially when accompanied by rice bodies, and also of some fibrous foreign bodies in joints. The joint affections had already been carefully studied by Riedel,[45] but in the increasing scepticism, as to the common origin and pathological importance of tubercular products, had been almost completely lost sight of. Bizzozero,[46] in 1874, described tubercular disease of the skin, of the sheaths of tendons, and other regions. K. Ohnacher[47] has recently published two cases of tuberculosis of the mamma with great detail, and a complete account of all previously observed cases. Nedophil,[48] though by no means the first, has discussed tubercular disease of the tongue more fully than any other author. For a more complete literature, I would refer to the works of Virchow[49] and E. Aufrecht[50] for the older observations, and to the elaborate articles of Neisser,[51] Mögling,[52] and Charvot[53] for the more recent. In spite, however, of the enormous amount of work done in this direction, the absence of what could be considered as direct proof of the etiological unity of all tubercular products made it difficult to draw any very practical conclusions from the knowledge obtained, and many of the authors mentioned above considered the frequency with which tubercle could be demonstrated in diseases clinically so utterly unlike as the strongest argument against the theory of its specific character. Rindfleisch's view, so widely accepted, of tubercle as merely an ordinary inflammatory process, modified by the constitution

of the individual in whom it occurred, and the great authority of Virchow,[54] who, defining tubercle as a neoplasm, and scrofula as an inflammatory process, running a peculiar course from local or constitutional causes, affecting the nutrition of the part, designated a very large proportion of surgical tuberculoses as scrofulous, tended to deprive these observations of their true importance.

In 1878 Volkmann's[55] article, "Über den Charakter und die Bedeutung der Fungösen Gelenkentzündungen," appeared. Founding his conclusions on examinations made by himself and his assistant, Friedländer, he declared the whole class of fungoid joint diseases, caseous lymphomata, cold abscesses, scrofulous ozæna, many rectal fistulæ, and obstinate ulcers of mucous membranes and of the skin, to be tubercular. He accepted fully Villemin's theory, which has been so much disputed, of the specific character of tubercle, and pointed to the frequent infection of all the parts surrounding a tubercular centre as most strongly confirmatory of this. Acting upon these views, he advocated the complete extirpation of all tubercular material, wherever accessible, as the only reliable means of curing the local disease and guarding against general infection. Heuter[56] had already advocated the same principles with great earnestness, though with less clear views as to the nature of the pathological processes; and Koenig, as he himself informs us in the dedication of his monograph already mentioned, while on a visit to Halle some twelve years ago, became an enthusiastic convert to the doctrines of his friend Volkmann. Under the guidance of these three great men German surgeons accepted the new teaching almost universally, and applied it so widely in operative practice as to have brought about at the present day a quite decided reaction. In France, however, it found few adherents; this is well illustrated by a discussion[57] of the subject as applied to diseases of the joints so late as 1882, in which many of the prominent French surgeons took part, and Lannelongue, whose work has been already referred to, almost alone supported the German opinion. In England and America, a reference to almost any of the most recent surgical works will show that it can scarcely be said to have made progress at the present day.

Even in Germany dissenters were not wanting among surgeons; Lücke, in 1880[58] and 1881,[59] denied the etiological unity of the chronic bone diseases in which the histological tubercle is found, attributing them to five different causes, as follows:

1. Hereditary and acquired tuberculosis and scrofulosis; 2. Hereditary and acquired lues; 3. Former attacks of infectious diseases, as pyæmia, osteomyelitis, typhus, etc.; 4. Trauma; 5. Gout.

And Sonneburg, in 1881,[60] headed what promised to be a formidable revolt among the younger men against the specific theory, had not Koch's discovery so shortly afterwards, afforded the means of placing it in an unassailable position.

In Koch's earliest publications on the subject, already referred to, the occurrence of the bacilli in surgical tuberculoses was demonstrated, and the extraordinarily small number in which they are usually found was noticed. Shortly afterwards more extensive observations were published by Schuchardt and Krause,[61] showing, on the evidence of a large number of cases, the constant occurrence of the bacillus. It will be more convenient to give the particulars of these and other reports later, when discussing the tuberculoses of different regions.

The technique of the examination may be considered under the following heads: 1. The selection and presentation of material, cutting, staining, and mounting. 2. Apparatus necessary for making the examinations and mode of examining.

1. It is almost unnecessary to say that only material should be selected containing the well-known gray gelatinous tubercle, usually dotted with small caseous specks. As this is difficult to recognize after immersion in alcohol, the selection should be made before hardening, or much time may be wasted in cutting. It is best to place the specimen directly in absolute or ninety-five per cent. alcohol, and cut as soon as it is sufficiently hard. Müller's fluid can be used,[62] but has no advantages, except the clearer demonstration of the tubercle reticulum,[63] while the granular precipitates to which it gives rise in the tissues interfere more or less with all mycological examinations.[64] Commencing putrefaction does not prevent the demonstration of the bacilli, and they can be found even in old alcoholic preparations.[65] On account of the very small number of bacilli found in most cases of surgical tuberculosis, it is usually necessary to examine a number of sections, and it is very desirable that they should be moderately thin and of even thickness throughout. A good section-cutter is, therefore, almost an essential, and I have used always the largest size made by Jung, of Heidelberg. The staining of the tubercle bacillus depends, as is well known, on the fact that after staining the object to be examined in a solution of one of the aniline dyes, usually fuchsine or gentian violet, made in a particular way, it can be decolorized by the dilute mineral acids and alcohol, when only the tubercle bacillus retains its color. The specimen can then be stained with a contrast-color, as methyl-blue for fuchsine, and Bismarck brown for gentian violet. This makes it easy to study the histology of the tissue, and forms a background on which the bacillus stands out more distinctly. There are a number of theories of the cause of this peculiar reaction of the tubercle bacillus, but none are at all satisfactory, and they need not detain us. Koch himself has discarded his original method of staining, and I will, therefore, not stop to describe it.

I have used altogether Ehrlich's method, which, with more or less modification, has been employed by almost all observers. My exact procedure has been as follows: To distilled water so much aniline oil is added that, after shaking vigorously, some still remains undissolved. This is allowed to stand for a few minutes, being shaken at intervals, and then passed through a moistened filter, when a clear fluid should be obtained. To this is added, drop by drop, a saturated alcoholic solution of fuchsine or gentian violet, until a metallic shimmer appears over the whole surface. In this staining fluid the sections are immersed for twenty-four hours. Fluids are spread in thin layers upon cover glasses, allowed to dry, passed three times moderately fast, with the smeared

side upwards, through the flame of an alcohol lamp or Bunsen burner, and then floated on the fluid for the same length of time. At a temperature of about 50° C., one hour is sufficient;[66] but I have found it more convenient, and think it surer, to keep them twenty-four hours. They are then tranferred directly to thirty per cent. nitric acid for a few seconds, washed for a few seconds in about sixty per cent. alcohol, and then stained again in a solution of methyl-blue or Bismarck brown, made by adding a saturated alcoholic solution of the coloring matter to distilled water, until the liquid begins to lose its transparency. The specimens remain in this for from five to ten minutes, are then washed in dilute alcohol, dehydrated in absolute or ninety-five per cent. alcohol, cleared in oil of cloves* and mounted in Canada balsam. These rules are identical with those most recently given by Koch,[67] except that he uses nitric acid, one part to three or four parts of water, leaves the specimens in the staining fluid twelve hours as the minimum, and gives exact proportions for making the staining fluids, and these changes are, I have no doubt, improvements. In my earlier work, I met with certain difficulties which it may be well to mention. Almost all the descriptions which I had at that time read spoke of the necessity of completely decolorizing the specimen in the acid. This I found to be quite impossible after the sections had been twenty-four hours in the staining fluid. Even after twenty-five minutes in the acid, a considerable amount of color remains in the tissues; it is, however, completely removed by the alcohol. There does not seem to be much danger of bleaching the bacilli by the acid, if the section has been stained during twenty-four hours, as I have found them very abundant in specimens which had been twenty-five minutes in thirty per cent. nitric acid. There is, however, great danger of decolorizing partially or completely, some or all, of the bacilli, when stained by any of the short methods, so useful for examining sputum. I would, therefore, strongly advise against the use of any of these short methods in surgical cases, in which it is to be expected that the bacilli will only occur sparingly, and, if but faintly tinged, may be obscured by the cells among which they lie. Koch directs, as a precautionary measure, that the specimens should only remain a few seconds in the acid. It is important that the specimens should not be immersed in water at any time after staining, as this fixes the remaining color, and makes it difficult or impossible to remove with alcohol; in this way other objects besides the tubercle bacilli may retain the characteristic color, and this has doubtless given rise to many errors. The thirty per cent. acid used to decolorize, besides being disagreeable to manipulate, sometimes shrinks the tissues to an inconvenient extent; the more dilute solution recently recommended by Koch is therefore an improvement, and he suggests that it may be safe to dilute it even more. I have found, however, in decolorizing with merely slightly acidulated alcohol, as recommended by Orth, the nuclei of some cells, and particularly the granular protoplasm of Ehrlich's mastzellen, are liable to retain the violet stain, and indifferent bacilli might possibly do the same. Horny constituents of the tissues retain the color, and fragments of this kind, such as hairs and horny epithelium, may give rise, if the fact is not known, to a suspicion that the specimen has been insufficiently decolorized. Almost all these points are discussed by Koch, whose last article on the subject I had not been able to see until after I had worked them out for myself. In accordance with most other observers, I have found gentian violet and Bismarck brown much the most satisfactory staining. Violet has indeed the disadvantage of not showing well by artificial light, but by daylight the bacilli stand out rather better than when stained with fuchsine. Bismarck brown, also, I have found more manageable as a contrast-color than methyl-blue; there is, I think, less danger of overstaining, and any superfluous color can be more readily washed out in alcohol. The lepra bacillus, as is well known, alone of all hitherto known varieties, stains in the same manner as the tubercle bacillus. It differs from it, however, in shape and size, as well as in coloring by Weigert's method for nucleus staining, and there is little practical danger of confounding the two. Considering the rather complicated technique, it is not strange that a small number of observers have reported that bacilli other than the tubercle and lepra varieties take the characteristic color. In one instance in which Craemer[68] reported the discovery of tubercle bacilli in the stools of healthy persons, Marchand[69] examined the specimens, and states that all bacilli were stained, the preparations being insufficiently decolorized. There is such a mass of reliable evidence on the other side, that it is fair to conclude that the remaining cases rest on similar errors. I have myself frequently examined decomposing urine, sputum, and pus, and once or twice tissues, in which putrefaction had commenced before immersion in alcohol; all these were swarming with microörganisms, stained brown, but I have not found any stained violet, whose shape, or size, or situation would suggest that they were not tubercle bacilli.

2. The tubercle bacillus can be seen with a power of about 300 diameters, but Koch recommends 500 to 700 as best. For the examination of fluids spread on cover-glasses, an ordinary microscope can be used. For the examination of sections, however, the addition of a good Abbe condenser, used without a diaphragm, is necessary. With this the outlines of the tissues are almost completely lost, and scarcely anything is seen in the field except the stained bacilli and the nuclei stained with the contrast-color. The Abbe is so essential that I would not attach any importance whatever to a diagnosis made by myself or any one else without its aid. It is true that in a section rich in bacilli it is possible to see a few, using a high power without the condenser. But were they not known beforehand to be bacilli, it would often be impossible to assert it with confidence, while the greater number escape observation altogether. Koch insists also on the importance of using a homogeneous oil immersion. Having been disappointed in an effort to get one, I have been compelled to use a very good Hartnach water immersion, No. 10, after first convincing myself by a number of trials that the bacilli could be very well seen with it. I have

found, however, where the tissues were deeply stained or the sections at all thick, some difficulty in penetrating them with the water immersion, and I have no doubt the oil system would have saved much time. In surgical tuberculoses, in which the bacilli generally occur very sparingly, they are usually in the giant cells. It is best, therefore, as pointed out by Schuchardt and Kraase, to pick out a giant cell and then examine it thoroughly with the immersion system, going on to another only when convinced that the first conceals no bacilli.

I shall give the results of my own investigations in the following order:

I. Tubercular disease of bones and joints.
II. Tubercular lyphomata.
III. Tubercular disease of the skin.
IV. Other tuberculoses.

Adding to each group such remarks as are necessary, and giving at the end the principal observations already published.

I. Tubercular Disease of Bones and Joints.

CASE I. *Fungoid Arthritis of Wrist, with several Sinuses.*—Man, æt. 35, family history of phthisis. States that he sprained his wrist thirteen months ago; that an abscess formed within a week, and was opened four weeks later. Excision February 9, 1884. Microscopic examination of sections of granulation-tissue on carpal bones shows hyaline cartilage, the cartilage-cells proliferating, and granulation-tissue containing a few cartilage-cells, without capsules, and at one point commencing to undergo change into cicatricial tissue. In the granulation-tissue there are a few tubercles, containing giant cells, and in some cases caseous in the centre. Four specimens examined: fuchsine; no double staining; two negative; in two a small number of bacilli.

CASE II. *Cold Abscess of Knee-joint.*—Adult man; disease of spine of many years' duration; joint distended with fluid; no sinuses. January 15, 1884, joint incised, and sero-purulent fluid, with large masses of fibrin infiltrated with pus, evacuated. Examination of sections of fibrin: fuchsine; five specimens; three negative; two contain a very small number of bacilli. March 19, 1884, excision of the joint. Microscopic examination of the thin layer of tubercular tissue lining the whole interior of the joint shows abundant tubercles, containing giant cells and cartilage invaded by granulation-tissue. Three specimens: violet and brown; two negative; in one a few bacilli; five or six in all, one in a giant cell, one close to, but apparently not in, a giant cell; the remainder on the borders of caseous material.

CASE III. *Fungoid Arthritis of the Shoulder-joint.*—Adult man; disease has existed more than six years; abscesses have formed and broken in the neighborhood of the joint, and sinuses remain open. Excision May 15, 1884. The cartilage is found to have disappeared from the head of the bone, which is in part covered by fungoid granulations, in part bare and carious. There is a large sequestrum lying loose in a cavity in the head of the bone. Gross appearance of the granulation-tissue is that of gray gelatinous granulations, with numerous white specks; caseous material throughout. Microscopic examination shows numerous tubercles, most of them containing one or more giant cells, and showing advanced cheesy degeneration in places. Five specimens: violet and brown; two negative; in one, five bacilli in a tubercle among epithelioid cells; in another, one bacillus in a giant cell; in a third, three giant cells contain each a bacillus.

CASE IV. *Fungoid Disease of the Tarsal Bones.*—Man, æt. 33; family history good; duration of the disease, four years; abscesses formed eight weeks ago. April 28, 1884, amputation of leg. There is extensive fungoid caries of the astragalus, scaphoid, and cuboid. Gross appearance of the fungoid tissue the same as in Case III. Microscopic examination shows granulation-tissue, with a border of young epidermis at one point, and containing numerous tubercles with many giant cells. Five preparations: violet and brown; three negative; in two, one giant cell in each contains a bacillus.

CASE V. *Fungoid Disease of (probably) Sacro-coccygeal Articulation.*—Man, æt. 34; family history good; general health good; lungs normal. Two months ago, small abscess to left of coccyx; broke in a few days, and pus, with small fragments of bone, evacuated. Sinus has remained open, and leads to an articulation, apparently that between the sacrum and coccyx. Sinus lined with fungoid granulations. May 16, 1884, resection and scraping. Microscopical examination shows typical tubercles. Five specimens: violet and brown; four negative; in one a miliary tubercle contains three bacilli, one in a giant cell, two among epithelioid cells; two other miliary tubercles contain two and one bacilli, respectively, close to, but apparently in, giant cells.

CASE VI. *Fungoid Disease of the Knee-joint.*—Young man; duration of disease unknown: numerous sinuses exist, and joint is much disorganized. Excision May 24, 1884. Fungoid granulations line the whole interior of the joint. No tubercular osteitis observed, and disease probably of synovial origin. Microscopical examination shows typical tubercles. Eight specimens: violet and brown; five negative; three contain one bacillus each, among epithelioid cells.

CASE VII. *Fungoid Disease of the Ankle-joint.*—Boy of about 17: duration of disease unknown; joint has been incised and drained, and sinuses remain open, and are lined with fungoid granulations. Excision May 22, 1884. Gross and microscopic appearances as in last. Five specimens: violet and brown; two negative; one contains three bacilli, and two others one each. All the bacilli are close to giant cells, and in or among epithelioid cells.

CASE VIII. *Fungoid Disease of Ankle-joint and Tarsal Articulations.*—Man, æt. about 22; disease probably primarily synovial; suppuration had occurred and incisions had been made; sinuses remain open. Mikulicz operation June 4, 1884. Gross and microscopic appearances as in Case VI. Five preparations: violet and brown; three negative; in one, two bacilli; in another, one.

CASE IX. *Suppurative Arthritis of Shoulder-joint, following Drainage of a Large Hygroma.*—Man, æt. 48. The hygroma, just in front of the anterior border of the deltoid, was first noticed nine weeks ago, and

then nearly as large as when incised; had been tapped twice. Incised March 11, 1884, when fluid containing rice bodies and disorganized tissue, like cartilage, evacuated. Joint entered, and articular surfaces found eroded. Excision June 9, 1884. The head of the bone was denuded of cartilage, carious, and covered in part with gray gelatinous granulations, containing, however, none of the white caseous specks. Portions of the granulation-tissue from the cavity of the joint present a similar appearance, but dotted with a small number of white specks. On microscopic examination, a large part of the section shows only granulation-tissue and young connective tissue; a portion consists of non-vascular tissue, formed principally of epithelioid cells, with a few giant cells, and at points commencing cheesy degeneration. On the borders are a few miliary tubercles, some becoming fibrous. Six specimens examined: violet and brown; four negative; in one, one bacillus in a giant-cell; in another, two bacilli close together.

CASE X. *Fungoid Disease of the Hip-joint.*—Girl of about five; both femur and acetabulum extensively involved, and sinuses exist; excision, June 18, 1884. Both gross and microscopic appearances of the granulations are those of tubercle tissue. Two specimens examined: violet and brown; several bacilli found in each; two in one giant cell.

These are all the cases of tubercular arthritis and osteoarthritis which I have examined, and, as seen, bacilli have been found in all; though in some cases only after a prolonged and careful examination, extending even over several hours. Even at the risk of being tedious, I have given these cases in some detail because, although few in number, they afford examples of each of the three forms of joint tuberculosis as classified by Koenig,[70] and even of several of the anatomical varieties included in these. Koenig's classification is as follows: 1. Hydrops tuberculosis; 2. Fungus tuberculosis, granulating fungoid inflammation of joints, tumor albus; 3. Cold abscess of joints.

Case IX. is a good example of the first class, which Koenig says is the form "relatively infrequent and still least known to the surgeon," and of which he gives the first really complete clinical description. It is also, as far as I know, the first case of this kind in which the bacilli have been demonstrated. We have in it, further, the extremely instructive combination of a large bursal hygroma, containing rice bodies, with a tubercular arthritis, the hygroma communicating with the joint. The recognition of these cases by Riedel, and recently by Koenig, has been referred to already.

Most of the remaining cases come under the head of (II.) fungus tuberculosis proper, by far the commonest form. Case III., in which a large sequestrum occupied a cavity in the head of the humerus, is a beautiful example of that variety in which a circumscribed tubercular osteitis gives rise to a limited necrosis immediately beneath the articular cartilage, and involves the joint secondarily. Koenig suggests, on account of the frequent wedge-shape of the sequestrum, that it is probably due to an embolic process. In such cases, as the sequestrum can be neither absorbed nor eliminated, it is obvious that operation offers from the very first the only prospect of cure. Unfortunately, it is very seldom that the state of affairs can be appreciated until the joint has been laid freely open. Several of the cases presented small cavities in the articular ends of the bones, filled with caseous material, indicating the probable origin of the disease in a circumscribed osteitis, causing the complete disintegration of the bone, and involving the joint secondarily as before. Case IV., in which the astragalus, scaphoid, and cuboid were all extensively diseased, is a good example of the infiltrated tubercle, where the disease rapidly involves the whole epiphysis or short bone, as the case may be, and produces complete disorganization of the neighboring joint. Such cases, which are fortunately not the most common, usually, as in the above, demand amputation. Cases VI. and VIII. were probably of synovial origin, as no tubercular osteitis could be found. Volkmann[71] declared this to be extremely rare, the disease beginning usually, and in children practically always, "so gut wie ausnahmslos," in the bone. Further observations, especially by Koenig, and by Müller[72] under Koenig's direction, have shown that although much the less common, the synovial origin is not so infrequent as Volkmann supposed, being in fact about 20 per cent. of all cases.

Finally, Case II. is a good example of (III.) cold abscess of the joint, or synovitis suppurativa tuberculosa, as Koenig prefers to call it, in which the interior of the capsule is lined with a tubercular membrane, and the joint distended with the characteristic tubercular pus.

II. Tubercular Lymphomata.

CASE I.—Anæmic, but otherwise robust young man. Lungs apparently sound. Cervical and axillary lymphomata of two years' duration. Partial extirpation February 19, 1884. Microscopic examination shows large-celled infiltration, abundant miliary tubercles, containing giant cells and advanced caseous degeneration in parts. Four specimens: violet and brown; three negative; one shows a considerable number of bacilli on borders of a caseous mass.

CASE II.—Man, aged 21. Cervical lymphomata of six years' duration. Extirpation April 15, 1884. Microscopic examination shows large caseous masses in all the glands, and immense numbers of miliary tubercles, containing generally one to three giant-cells. Three specimens: violet and brown; one negative; in one, three bacilli in one giant cell; in another section, one bacillus in a giant cell, and one among epithelioid cells.

CASE III.—Young man. Cervical lymphomata. Extirpation June 18, 1884. Microscopic examination shows glands to be almost entirely caseous; only at borders of the glands are a number of typical tubercles, almost all caseous in the centre, and most containing a giant cell. Three preparations: violet and brown; one negative; in one, six bacilli together, among epithelioid cells; in another, two giant cells contain each a bacillus.

In a fourth case, in which cervical lymphomata presented the typical tubercular structure, no bacilli were found in the three sections examined, but as

they were found in sections of a tubercular cervical ulcer, excised from the same patient, the search was not continued.

Mögling, in his discussion of chronic lymphomata, quotes Ziegler's classification as follows:

1. The small-celled hyperplasia, undergoing caseation or suppuration. 2. The large-celled indurated hyperplasia. 3. The reticular hyperplasia. 4. Tuberculosis, and the more complicated and less satisfactory arrangement of Orth.

He shows that Group 2, in the above, is undoubtedly to be considered as tubercular, both from the anatomical structure and the fact that Dr. Nauwerck, and Mögling himself, have demonstrated the bacilli in glands of this structure, but leaves it doubtful whether those in the first group, which undergo cheesy degeneration, do not belong to the same category. The four cases given above all presented the classical tubercular structure described by Schüppel, namely, groups of epithelioid cells enclosing more or less numerous giant-cells. To these may be added a fifth, not of a surgical character.

5. Mesenteric lymphatic glands from child dead of tuberculosis of the lungs, liver, and mesentery. Mesentery studded with miliary tubercles. Microscopic examination. Almost the whole gland caseous; at the borders a few tubercles, most of which are fibroid. Here and there groups of lymphoid cells, not yet cheesy. Three specimens: two negative; in one, four bacilli, lying among lymphoid cells.

These cases, therefore, only furnish additional evidence, if such were needed, that all lymphomata possessing this characteristic structure are due to the invasion of the tubercle bacillus. The further question raised by Mögling, whether any other than these are due to the same cause, has been practically settled by Koch[73]* himself, who, after demonstrating the bacilli in all cases, twenty-one in number, having the tubercular structure, failed to find them in any of a number which were enlarged, in some cases softened, and containing small collections of pus, but which did not show the collections of epithelioid and giant cells. Here, then, as elsewhere, we may rely confidently on the histological structure for a diagnosis.

III. Tuberculosis of the Skin.

CASE I. *Tubercular Ulcer of Thorax.*—Man, about twenty-five, with remarkably long, flat thorax; superficial ulcer, about two and a half inches in diameter, over the upper portion of the sternum, with eroded, undermined edges, constantly spreading by erosion of the margins; surface covered with small granulations, which have a great tendency to break down. Patient has acute phthisis, the whole of the right and a great portion of the left lung being involved. No appetite; hectic and constant cough, with very abundant purulent expectoration. States that these symptoms have only existed a few weeks, and appeared after the ulcer. Examination of the sputum: fuchsine; a small number of bacilli. Examination of material obtained by scraping: eight preparations; fuchsine; six negative; four bacilli in one, and one in another.

CASE II. *Tubercular Ulcer of Sac.*—Young man with tubercular cervical lymphomata (see Cervical Lymphomata, Case IV.), and ulcer of the neck, which was excised. Microscopic examination of sections made through the base of the ulcer shows typical tubercles containing giant cells. Twelve specimens: fuchsine; eight negative; two contain each a small number of bacilli, and two a very few.

CASE III.—Caspar Doerr, æt. 52, Feb. 14, 1884. Family history and general health good. One year and eight months ago small papules appeared on dorsum of left wrist; these coalesced, forming a patch, which spread at the margins, not itching. Just before admission, acute lymphangitis, extending from the wrist to the axilla, where lymphatics are enlarged and painful. Examination: There is a papillary growth on the dorsum of the wrist, but slightly elevated above the surface, squamous at the edges, of irregular, oval shape, about four inches long, and extending slightly on the dorsum of the hand. Tissues boggy, and pus can be squeezed out between and from beneath the hypertrophied papillæ; there are irregular, isolated papules around the margins, showing the orifices of a few sebaceous follicles, from which pus and cheesy material can be squeezed; ether was administered, and the parts thoroughly scraped with a sharp spoon, which readily penetrated to the fascia, through tissue resembling soft granulation-tissue commencing to break down. Lymphadenitis subsided promptly and surface cicatrized.

September 12th: seen a few days ago, when cicatrix was firm and healthy. There are a few papules resembling lupus nodules around the margin. Microscopic examination shows hypertrophy of the papillæ, with rapid proliferation of the epithelium, forming numerous nests. Papillæ infiltrated with small, round cells, and in parts transformed into granulation-tissue; no tubercular tissue seen. Seven sections examined: fuchsine; all negative.

CASE IV.—Woman, æt. 58; March 18, 1884. About one year ago noticed a small pimple on the back of the left hand. This gradually enlarged, and about two months ago began to discharge a seropurulent fluid. Examination: There is a patch, the exact counterpart of that in the last case, except that the lymphangitis is absent; it is elliptical, two by two and a half inches in diameter, situated on the outer part of the dorsum of the left hand, just above the fourth and fifth fingers; ether; surface scraped with sharp spoon, presenting precisely the same characteristics as Case III.; cicatrized rapidly. Microscopic appearances precisely similar to Case III., except that epithelial pearls are much less abundant. Five preparations: all negative.

I have thought these two cases of sufficient importance to be given in detail, although no bacilli were found in them, because, occurring in advanced adult life, they presented very exactly the features of lupus verrucosus or papillaris, combined with those of the scrophuloderma of Neisser, or tubercular gumma of Deprès. Unfortunately, trusting to the microscopic examination, no inoculations were made, and, having only scrapings to deal with, it was almost impossible to find fragments from which sections

could be cut, and those obtained showed only hypertrophied papillæ and proliferating epithelium, in which I could not expect to find bacilli. The clinical diagnosis, however, acquired greater certainty from a third case, presenting many points of great similarity, as follows:

CASE V.—James McMullen, æt. 53. May 17, 1884. Family history good; general health good until about six years ago, when left forearm was amputated for chronic suppurative disease of the wrist-joint, occurring without known cause. Two years ago a small red pimple appeared on dorsum of right hand; itched much, and spread in all directions. At first dry and scaly; surface became moist; healed in the centre and spread at the edges. With various salves portions of the edges healed, leaving patches on the dorsum of the metacarpo-phalangeal articulations and radial margin of wrist, as at present; ceased to itch after a time. Three months ago the whole ulnar half of the dorsum of the wrist, hand, and lower two inches of the forearm became red, swollen, and painful; and two months ago a number of openings formed spontaneously and discharged pus; have remained open since.

Examination: There are horny papillomatous patches on dorsum of metacarpo-phalangeal articulation of thumb, index, fourth and fifth fingers. Surface is dry, horny; margins dull-red; patches slightly elevated; blunt end of probe readily penetrates the tissues. Over the first carpo-metacarpal articulation is a red, slightly elevated, elliptical patch, one by one and a half inches in diameter, dry and slightly scaly on the surface, exactly resembling lupus exfoliativus. This has shifted from the dorsum of the hand, leaving the skin behind it white and atrophied; whole unaffected portion of dorsum of hand where the disease has been is thin and atrophied. The portion of the wrist and hand described above as the seat of inflammation during the last three months is red, boggy, and slightly swollen. On ulnar margin of wrist are two small openings, through which a probe can be passed in all directions under the skin, and sero purulent fluid escapes; all the skin involved, though dry and covered by cuticle, can readily be penetrated by the probe; scraped thoroughly with sharp spoon, and operation repeated shortly afterwards; condition much improved, although several sinuses remain open, and there is still a good deal of infiltration of the tissues. Inoculation on July 2d of guinea-pig, subcutaneously in abdomen, with material obtained by scraping; Koch's syringe used, and careful antisepsis. Two days later control-inoculation of another guinea-pig in same manner, with indifferent material. September 1st guinea-pig killed; inguinal glands and one lying on common iliac artery on inoculated side enlarged to size of beans, caseous throughout, and broken down in the centre. No other tubercular lesions found; control guinea-pig healthy, and inguinal glands not enlarged. Examination of caseous substance from glands (violet and brown staining) shows large numbers of bacilli, almost all containing spores, and well developed.

In addition to these cases, I must mention that an intraperitoneal inoculation of a guinea-pig with lupus vulgaris of the face failed entirely. Neisser,[14] in his most valuable and elaborate article on tuberculosis of the skin, classifies them as follows:

1. Tuberculosis in the narrower sense, with the formation of ulcers situated in the cutis, and of miliary tubercles, as part of a general tuberculosis.

2. Lupus, a less harmful variety of tuberculosis, generally remaining limited to the skin.

3. Scrophuloderma ulcerosum—*i. e.*, ulcerations which remain after the evacuation of the so-called subcutaneous cold abscesses.

Mögling objects to this classification on logical grounds, since all being tuberculoses it is not well to apply this name, which properly belongs to the whole class, to a single variety; and points out that, by this arrangement, we have the ulcers extending from tubercular lymphomata under the scrophulodermata, while those originating in tuberculosis of the bones of the skull are considered true tuberculoses. The objections to this classification are well illustrated by the following case:

Man, æt. 21; father died of consumption five years ago. Patient has cervical tubercular lymphomata of eight months' duration, and advanced acute phthisis, symptoms of two months' duration. Sputum is very abundant, and contains immense numbers of bacilli. About four months ago, a small lump appeared just below the inner third of the right clavicle, softened and broke, discharging white matter, and leaving a superficial ulcer, now almost exactly similar to that in Case I. Comparing this with the ulcer of the thorax, described above, we have two lesions, anatomically precisely alike, occurring in patients about equally advanced in acute pulmonary tuberculosis; but the one which commenced as an abscess, classified as scrophuloderma; the other, which was an ulcer from the beginning, as tuberculosis.

Mögling himself suggests the following division, taking the etiology as the principle of classification:

1. Primary tuberculosis of the skin.

A. Lupus.

B. Tubercular ulceration and pachydermatous infiltration (pachydermie).

2. Regional tuberculosis, extending to the skin.

3. Metastatic tuberculosis.

To this, there are still graver objections than to Neisser's. The term metastatic, applied to one subdivision, implies that no other variety can originate in that way. But this, it is scarcely necessary to point out, is a pure assumption. It is, indeed, true that since the tubercular character of lupus has been recognized it has been very generally treated as probably due to a local infection from without. There is, however, not a particle of evidence in proof of this view. Case V., in which we have a lupoid eruption on the hand, combined with the so-called tubercular gumma, occurring four years after the amputation of the forearm for what was almost certainly tubercular disease of the wrist-joint, would rather suggest that all these lesions were due to auto-infection from a tubercular focus, such as caseous bronchial lymphomata, as Koenig[15] has shown to be the case in probably about 79 per cent. of all joint tuberculoses. Moreover, many tuberculoses of the skin, starting from tubercular lymphomata, or the

fistulæ communicating with a tubercular osteitis, are, as Koenig emphasizes,[76] anatomically not to be distinguished from lupus.

It seems to me far better to call all varieties tuberculoses, describing the special lesion according to its anatomical character or supposed mode of origin, as is done for the cutaneous syphilides, letting such terms as lupus and scrophuloderma drop from scientific nomenclature, as has already been so nearly done for such terms as rupia and ecthyma in the kindred disease.

Before leaving the subject it may be necessary to say a few words as to the evidence which leads me to place lupus so unreservedly among tubercular lesions. Friedländer had placed it, as before mentioned, on histological grounds, among the tuberculoses, and was followed by Köster and Besnier, while Hardy, Pick, Baumgarten, Vidal, and others[77] took the opposite view. Demme[78] found bacilli in very moderate numbers in three cases of lupus. L. Dautrelepont[79] found them in seven cases. Pagenstecher and Pfeiffer[80] inoculated three rabbits in the anterior chamber of the eye with secretion from lupus of the conjunctiva. The first inoculation was apparently successful, but no microscopic examination of the diseased iris was made. In the second and third cases, however, this was done, and numerous bacilli were found. A fourth case had produced no result after four weeks. They failed to find bacilli in the lupus of the conjunctiva used for inoculation number three, and in numerous preparations from other lupus cases. Cornil and Leloir[81] in twenty-two inoculations produced tuberculosis seven times. Two of the remaining animals died too soon to be of any value. The authors were inclined to believe that some of the other cases might have succeeded if they had waited longer. In their histological examination of twelve cases of lupus they found regularly the usual tubercle structure, but out of ten sections from each case, stained by Ehrlich's method, they only found the bacillus once, and then a single bacillus. This was in a case of lupus of the ear, occurring in a phthisical person. They concluded that lupus may be an attenuated form of tuberculosis. Malassez[82] did not find the bacillus, and his inoculations failed also. Morison[83] found no bacilli in ten cases, and mentions that Dr. Symington had the same experience in at least fifteen more cases. I have only had opportunity myself to make two inoculations with uncomplicated lupus. The first, as already related, failed entirely, and it is still too early to judge of the second.

Finally, Koch[84] has demonstrated the bacilli in four cases of excised lupus. The bacilli were always in giant cells, and occurred so sparingly that in one case twenty-seven, and in another forty-three sections were examined before a bacillus was found. With these four, and three other cases from which only scrapings could be obtained, inoculations were made, and all gave positive results. In the face of so many successes by reliable observers I cannot admit that the question is still an open one, because there have been a certain number of failures. Dr. Morison,[85] who has been kind enough to give me the details of his examinations, states that the sections were kept in the staining-fluid three-quarters of an hour, in an oven at the temperature of the blood, and *completely* decolorized in nitric acid, 33⅓ per cent., which, as he states in his article, sometimes took as long as five minutes. Both these are doubtful proceedings, to the dangers of which Koch[86] has specially called attention as follows: "After a deeper staining, which gives decidedly better and more reliable results, nitric acid no longer completely decolorizes the stained layer, and sections which, as was specially mentioned, must be stained *for a longer time and very intensely*, retain always after the treatment with nitric acid, a moderately dark staining. The expression 'decolorized' is, therefore, here not to be understood literally. The failure in staining the bacilli seems in most cases to have depended on the fact that it was supposed the preparations must be altogether colorless after the nitric acid treatment, and that in order to attain this they have been *in part too little stained* and in part *allowed to remain too long in the acid.*"

The fact that Dr. Morison demonstrated the bacilli by this method, in other tubercular tissues proves nothing, for, as I have repeatedly found, where many are presented, a certain number will show when stained even by very inferior means. The extremely small numbers in which the bacilli occur in most cases of lupus would itself account for most of the failures.

(To be continued.)

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A PAINLESS ESCHAROTIC.

BY N. A. RANDOLPH, M.D.,
AND
SAMUEL G. DIXON.

IN the rapidly growing literature of cocaine, it is not impossible that the application which we here

* Koch recommends the use of oil of cloves, which dissolves the aniline colors out of the preparations. Before I knew this, I noticed that almost all my preparations faded very rapidly.

† Pfeiffer reported later (Ber. klin. Woch., 28, 1883) the discovery of the bacilli in sections of lupus of conjunctiva.

briefly describe, has already been employed; but, if so, it has escaped our scrutiny of the later developments regarding this drug.

When a saturated solution of cocaine hydrochlorate in strong nitric acid is applied to the uninjured skin, the ultimate result is precisely that which would occur upon the similar application of pure nitric acid, but the time required for the formation of a deep eschar is considerably longer in the former than in the latter case.

We have experimented with the mixture just mentioned upon several individuals, ourselves included, and can safely say that the sensations attending its application cannot be accurately described as painful. There is, however, a slight pricking sensation soon after the mixture is first dropped upon the skin.

Upon one person a control-experiment was instituted in the following manner: Upon his right arm were placed four drops of strong nitric acid, while upon the same point on his left arm was similarly disposed the same quantity of the mixture of nitric acid and cocaine hydrochlorate. The pure acid caused great pain, and was speedily removed; the mixture, which was applied later, caused a sensation described as "tickling, with slight pricking," which soon passed away.

In two cases the burned points were covered with absorbent cotton wet with a two per cent. solution of cocaine salicylate—a salt which we have not yet seen described, but which, in addition to the peculiar properties of its contained alkaloid, appears to be somewhat antiseptic. There has been no discomfort after the formation of the eschar. Prof. Harrison Allen, to whom we presented a portion of our solution of the salt last mentioned, kindly reports that he has applied it several times in his practice as a substitute for other salts of cocaine, with good results.

BIOLOGICAL LABORATORY OF THE UNIV. OF PENN.,
January 16, 1885.

MEDICAL PROGRESS.

THE MICROBES OF INFANTILE DIARRHŒA.—At a late meeting of the Biological Society of Paris, M. CLADO presented the results of the joint researches of himself and M. DAMASCHINO upon the microbes of infantile diarrhœa. The observations were made upon some children while yet at the breast, who were affected with diarrhœa, and upon others convalescent from measles. In these conditions, the fecal discharges are green, and the diarrhœa is serious; or they may at first be dark, and become green on exposure to the air. This latter form, though less grave, frequently is a prelude to the diarrhœa of cholera infantum. The investigations were begun in 1883, before the last appearance of cholera, and have been continued ever since; and microörganisms, distinct from those existing in the discharges of cholera, have been plainly shown to exist in infantile diarrhœa.

The microbes are stained with methyl-blue for microscopic examination, and are present in vast numbers. They are rod-shape (*bacilles en bâtonnets*), of characteristic size and appearance, and exist almost exclusively in grave cases, and are more numerous as the disease is severe. They are much larger than the bacilli of tuberculosis, and their study is also easier, especially with an immersion objective. Most frequently they are in grape-like collections, in shape sometimes slightly curved, crescent-like, and exceptionally semicircular. Their extremities are not pointed, as are certain microbes found in diarrhœal discharges, but are rounded. The bacilli are never found in the interior of epithelial cells, or of epithelial masses, but always in their interstices. At times groups of the bacilli seem to be united by an albuminous material. When observed while fresh in a drop of distilled water, they at times are in motion, and seem to have for the centre of motion the middle portion of the microbe. In all cases, as convalescence progressed, the microbes proportionately became less numerous. These investigators hold that in all cases the results obtained have been constant, and they are at present making cultures as a further confirmation of their research.—*Le Progrès Médicale*, Dec. 27, 1884.

THE SIGNIFICANCE OF PYARTHROSIS IN SCARLATINA.—LÖFFLER has made the interesting discovery that there exists in the membrane of scarlatinous diphtheria a chain-shaped coccus. If one of these be introduced into a joint, inflammation soon results, and if simply introduced beneath the skin, an inflammation resembling erysipelas follows. He therefore concludes that probably the pyarthrosis accompanying this exanthem is due to the same cause. A case is cited in which a scarlatinous diphtheria, pursuing at first its ordinary course, became at length complicated with enlargement of the spleen and pericarditis with lung complications. On the tenth day fluctuation in the articulations of the second and third fingers of the left hand appeared. Three days subsequently, fluid was discovered in both knee-joints. A day later the boy died. Autopsy showed the presence of a purulent fluid in the joints already mentioned, and also in the ankle-joints. There was erosion of the articular cartilages, and in two of the fingers the epiphysis of the bones was destroyed by suppuration. Microscopic examination showed the presence of micrococci throughout the body and in the blood. They were very abundant in the affected joints, though in this situation the development had not proceeded so far as in the blood and on the skin, but the identity of the micrococcus in different parts of the body was undeniable. From consideration of all the facts, the conclusion is reached by Dr. Löffler that the infection primarily existing in the tonsils was, owing to an abrasion, carried secondarily by the blood throughout the body, thus causing the remarkable complication.—*Berlin. klin. Wochenschrift*, Nov. 3, 1884.

ULCERATIVE ENDOCARDITIS.—M. GRANCHER reported a case of ulcerative endocarditis to the Société de Thérapeutique which seems plainly to show the zymotic origin of the disease.

A man was long affected with heart disease, which finally showed the symptoms of ulcerative endocarditis without complications. The patient entered the hospital in a state of collapse. The case was diagnosticated as above, and experiments were at once begun to confirm the diagnosis. A drop of blood from the patient was taken each day. Every precaution necessary to accurate results was observed, and in all the flasks used for the culture there appeared in twenty-four hours at the bot-

tom of the vessel small granular masses made up of a conglomeration of very small micrococci. These were the same in every vessel. The patient finally died, and blood taken from the heart cavity gave by cultivation the same micrococcus. The aortic valves presented the common lesions of vegetative endocarditis, and microscopic examination of the surface of the valves showed the presence of the same organism.

Grancher intended to cultivate the micrococcus and to make inoculations to verify this observation, but unfortunately, when he resumed his investigations, he found the micrococci dead, and, some time having elapsed, all efforts at further cultivation failed, and experimentation was impossible. There seems to be no doubt, however, of the zymotic origin of the disease.—*Journal de Médecine de Paris*, Dec. 20, 1884.

IS THE REMOVAL OF THE THYROID BODY WARRANTED FROM A PHYSIOLOGICAL STANDPOINT?—The experiments of ZESAS (which appear in *Archiv für klin. Chirurgie*, Bd. lxxv. Heft 2) upon the effect of the removal of the spleen and thyroid body, have given interesting disclosures concerning the function of these organs. During the experiments, extirpation of the spleen was alone well tolerated, but removal of the thyroid body was followed by striking manifestations. The animals for two weeks refused nearly all food, were drowsy, walked with tottering gait, and died usually in convulsions. These effects were also manifested in animals which had survived the removal of the spleen, and from which subsequently the thyroid body was removed. In them was also observed an enormous increase in the number of the white blood-corpuscles. In those animals from which the thyroid body alone was removed, the increase of the white blood-corpuscles was not so remarkable as it was in those in which the spleen only had been extirpated. Ablation of the thyroid body produced notable anæmia of the brain and hypertrophy of the spleen.

The lymphatic glands, especially those of the mesentery, were frequently greatly enlarged, and filled with a black pigment. It, therefore, appears from these experiments that the thyroid body not only has the function of acting vicariously for the spleen, but also plays an important part in regulating the supply of blood to the brain, and may, in fact, be considered as a special organ for this purpose. Zesas decides from his experiments that the removal of the thyroid body is not justifiable, and his conclusions are strongly supported by the results of this operation performed by Kocher on man for the scrofulous degeneration of the organ.—*Centralblatt für Chirurgie*, December 20, 1884.

PARALYSIS RESULTING FROM HYPODERMIC INJECTIONS OF ETHER.—In the *Revue Médicale* for December 20, 1884, M. ARNOZAN calls attention to paralysis resulting from hypodermic injections of sulphuric ether. In four cases the paralysis of the muscles, affected by the puncture, appeared shortly after the injection was made. The paralysis seemed peripheral in its nature, as was shown by the attending changes in electrical excitability (suppression or diminution of faradic excitability, increase of galvanic excitability, return of voluntary motion before the return of faradic excitability); improvement was remarkably accelerated by the continued current. The question is how the ether produces the paralysis, whether by rendering the muscular fibre incapable of contraction, or whether by its injection the terminal intramuscular nerve filaments are disorganized. Experiments conducted by MM. Arnozan and Salvat, and practised upon a rabbit, show that the injection of ether produced on all occasions an almost instantaneous paralysis. After some days the rabbit was killed, and lesions of the nerve fibres were very distinct.

M. Arnozan concludes his observation by suggesting that in the hypodermic use of ether, care should be taken in all cases to avoid introducing it into the muscular tissue, simple subcutaneous injections being harmless.

IMPLICATION OF THE SENSE OF HEARING IN BLENORRHAGIC RHEUMATISM.—HERMET, noting the rarity of this complication, discusses at length the condition as it existed in a case in which the clinical symptoms were carefully observed. The rheumatism affected various joints throughout the body, and it was noticed that amelioration of the general symptoms was alternated by loss of hearing, and, *vice versâ*, improvement in the auditory function was followed by return of the rheumatism elsewhere. The pain in the ears, during the attacks of deafness, was intense, all sounds, especially those of a high pitch, causing extreme pain. Examination of the ears revealed (in the left) a calcareous plate situated at the posterior border of the tympanic membrane, and which was probably due to the result of a former purulent otitis, which had followed a previous attack of rheumatism. The right ear was normal. Reviewing the anatomical relations of the ossicles and the tympanic membrane, Hermet logically concluded that the impairment of hearing is due to the extension of the rheumatic arthritis to the articulations of the ossicles. Accordingly, when the tympanic membrane, vibrating under the impulse of the sonorous waves, communicated motion to the chain of bones, pain was experienced, inasmuch as the attachment of the handle of the malleus to the membrana tympani necessitates motion in every articulation of the chain. The fact that during silence there was entire absence of pain, strongly confirmed the conclusions reached, and the observed alternation of the auditory and general manifestation of the disease left but little doubt of the correctness of the diagnosis—blenorrhagic rheumatism of the tympanic bones.—*L'Union Médicale*, December 25, 1884.

PLASTIC OPERATIONS UPON THE PALATE.—M. ULYSSE TRÉLAT, in a paper on plastic operations upon the palate and the determination of the age at which it is proper to operate, reaches the following conclusions:

1. It is not necessary to perform plastic operations in this locality before the child has reached its seventh year.

2. Children who are to be operated upon should be carefully drilled in articulation of vocal sounds from the time they first begin to speak up to the time of operation, and the drill should be resumed at once after the operation. Functional cure is hastened and the ability to enunciate distinctly is rendered more certain by such a course.

Should harelip exist, along with cleft palate, the indications for operation are no longer the same. In such

cases, it is advisable to operate in the first month or within six months after birth. The measure of success, as relates to ability to articulate distinctly, here again depends upon careful training before and after the operation.

M. Trélat further remarks, concerning the operation, that when the division extends from the alveolar borders to the veil of the palate and palatine arch, success is possible, but failure often results. Plastic operation is unnecessary when the fissure is not of sufficient width to admit fragments of considerable size; simply bringing and retaining the parts in apposition is preferable.

Plastic operations are not dangerous. In forty-six cases operated upon by M. Trélat, all recovered. He operates with the patient in a horizontal position, the head bent far backward, so as to prevent as fully as possible access of blood to the bronchi. The food should be semi-liquid for ten or twelve days succeeding the operation. Cure ordinarily is effected in from four to eight days.—*Gazette Hebdomadaire*, Dec. 26, 1884.

THE RADICAL CURE OF HERNIA.—At a recent meeting of the Surgical Society of Paris, M. BOUILLY presented a patient upon whom he had operated for the radical cure of double scrotal hernia, with complete success. The patient was a man, 50 years of age, and the hernia so large that it reached to the middle of the thigh. Replacement of the bowel, so as to permit the wearing of a bandage, was the end to be attained, and with this result in view M. Bouilly operated. The sac was opened and the intestine easily replaced, and its descent prevented by closing the opening through which it had protruded. This was done by forming a pouch by suture of the sac at the neck, suture of the ring being impossible. The remainder of the sac, contained in the scrotum below the neck where the suture was made, was removed. The same operation was then performed on the other side. The wound was treated antiseptically and drainage-tubes introduced. Two days subsequently, inflammation was found to exist. This was the result of imperfect drainage, one of the tubes having been removed for the purpose of cleansing it, was improperly returned, and the pus was unable to escape. Fortunately, however, the inflammation did not extend to the peritoneum, and the patient recovered, and the application of a bandage prevented the protrusion of the hernia.—*Revue Médicale*, December 27, 1884.

TREATMENT OF BLENORRHAGIA.—M. EDMOND DELORINE, in an exhaustive paper on the nature and treatment of blenorrhagia in man, arrives at the following conclusions, relative to the management of the affection:

Recent researches upon the nature of blenorrhagia have completely modified existing methods of treatment. Injections, employed from the first appearance of the disease, or from a time closely related to its first appearance, are at present used much more unreservedly than heretofore, and without any adjuvant, except hygienic measures. It is impossible, owing to dearth of exact information, to pronounce definitely upon the value of topical applications now so highly lauded, and a definite conclusion upon this point can only be reached after further investigation. Finally, preventative injections, after impure coitus, or in patients who manifest the first symptoms of the disease, deserve to be resumed. —*Archives de Medicine et de Pharmacie Militaires*, Jan. 1885.

CALOMEL IN THE TREATMENT OF OTORRHŒA.—DR. J. GOTTSTEIN, in the *Archives of Otology*, Sept. to Dec. 1884, strongly recommends the use of calomel in the treatment of otorrhœa. He says: During the past year I have used the calomel by way of trial in a number of cases that have seemed suitable, especially such as could be submitted to daily observation.

I have satisfied myself (1) that the remedy is absolutely free from irritation to the mucous membrane of the middle ear; (2) that it forms neither upon nor in the mucous membrane any precipitate difficult of removal; (3) that surprising results are often obtained under its use.

Accordingly, since the beginning of the present year, I have, in my private practice as well as in my polyclinic, employed calomel in the treatment of all cases of otorrhœa in which, following Bezold's direction, I had previously made use of boric acid alone, or as a supplementary means. I withheld the calomel only from such patients as, coming from a distance, I had an opportunity to see but once.

My observations now exceed eighty in number, so that I feel justified in communicating the results of my experience with this method.

My method of procedure is as follows: The ear is, in the usual way, syringed carefully with a weak sublimate solution (one-tenth per cent.); the residue of the secretion is forced into the external meatus by the employment of Politzer's method, and then removed by syringing; and, finally, the ear is well dried with cotton.

The calomel (vapore parat.) is then blown in through a powder-blower,[1] and the auditory canal closed as well as possible by means of cotton. The further treatment is the same as with the boric acid.

That on which I lay the most stress is that calomel, in my opinion, has a much more certain and decided antiseptic action than the boric acid.

I am anxious to avoid the error into which those authors fall who overestimate the value of the remedies recommended by them. Calomel also fails in some of the cases in which powerful antiseptic action is desired, because considerable tissue alterations in the drum-cavity are absent. Yet I have, with no method of treatment, not even with the boric acid, attained such speedy results as with this remedy in acute as well as in chronic forms of otorrhœa.

The calomel is also suitable, as is the boric acid, for employment after operations in the middle ear, cauterization with nitrate of silver, the use of the galvano-cautery, and in conjunction with the alcohol treatment. In these cases, the powerful antiseptic action of the remedy is conspicuous.

[1] In my consultation hours, I make use of the powder-blower of Kabierski (*Centralblatt für Chirurgie*, 1883, No. 33), which I have found, after long trial, the most suitable for the treatment of the ear as well as of the nose and larynx. It has the advantage that it does not need to be filled for each case, that the insufflation can be made with ease and accuracy during the examination of the parts, and, finally, a separate tip can be used for each patient, a measure necessary for the attainment of a thorough antisepsis.

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NEPHRECTOMY IN INFANTS AND CHILDREN.

AT a recent meeting of the Clinical Society of London, the proceedings of which are recorded in the *British Medical Journal* for November 1, 1884, MR. GODLEE read a paper on a case of abdominal nephrectomy for sarcoma in a boy twenty-two months of age. The removal was accomplished without any difficulty; the cure was uninterrupted by a single bad symptom; and the child was discharged in six days. In six months, however, recurrence took place in the right iliac fossa; the tumor rapidly increased in size, passing down into the scrotum; and death ensued soon after.

Mr. Godlee, in his comments on the case, mentioned eight other examples of extirpation of the kidney for morbid growths in subjects of tender years. Including his own, the 9 cases show that 5 died of the immediate results of the operation, 3 recovered, but died subsequently of a recurrence, while 1 was well when last heard of. Despite these unfavorable results, and in view of the hopeless condition of these patients if left alone, he argued that attempts should be made to remove neoplasms at an early stage; but, at the same time, plead against interference when the growths had attained a large volume.

Unless we greatly mistake, the weight of opinion is against nephrectomy for tumors in children, and we believe that the majority of surgeons will endorse, so far, at any rate, as sarcoma in early life is concerned, the view expressed by Mr. Henry Morris, in the fifth volume of the *International Encyclopædia of Surgery*, which has just been issued from the press. He says: "It is probable that future experience will exclude from the category of cases for which nephrectomy, by any method, should be done, tubercular disease, and renal sarcoma in children, as well as cancer at any period of life."

We have before us the notes of 11 extirpations of the kidney for neoplasms in children, 10 being for sarcoma and 1 for adenoma, an analysis of which shows that the operation has thus far been of the most disappointing nature. It may be mentioned that the surgeons were Hueter, Jessop, Kocher, Czerny, Hicquet, Rawdon, Réczey, Little, Ollier, Sir Spencer Wells, and Godlee. Of the entire number, 8 perished from the immediate results of the operation, thereby showing a mortality of 72.72 per cent., and 3 recovered, namely, the cases of Jessop, Hicquet, and Godlee. Ten of the operations were by the ventral incision, of which 8 died; and 1 was by the lumbar incision, which recovered. Of the 3 recoveries, the patient of Hicquet remained well at the expiration of three months, the date of the last report; while the disease recurred, respectively, in six and nine months in the cases of Jessop and Godlee.

It will thus be seen that the immediate mortality was 72.72 per cent., and that the disease returned in 66.66 per cent. of the recoveries. In addition to this gloomy record, we have, however, to state that the operation does not prolong life, since the average duration of life was fifty days, as against an average life of between seven and eight months in the same class of subjects, when the disease is allowed to pursue its natural course.

While we are of the opinion that nephrectomy is unjustifiable in children the subjects of renal neoplasms, further experience may show that Mr. Godlee is right in asserting that interference is proper in the early stage of the affection, particularly as Kühn states that secondary growths are found in only 28 per cent. of sarcomata of persons of tender years. But when we consider that these cases rarely come under the observation of the surgeon until the tumor has attained a considerable volume, it can scarcely be expected that the future will show better results than those now recorded.

Although the extirpation of the kidney for sarcomata is an extremely lethal procedure in children, it is gratifying to know that the operation may be resorted to with an excellent prospect of a successful issue in the same class of subjects suffering from other renal lesions. Thus, of 2 ventral nephrectomies for hydronephrosis, at the age respectively of four and seven years, in the hands of Thiersch and Thornton, both recovered; while 2 additional cases for suppurative lesions, done at five and seven years by Baker and Bardenheuer, both by the posterior incision, were cured. Rawdon, however, had a death from suppuration of the opposite kidney after lumbar nephrectomy for rupture of the organ.

The greater success in these five cases was doubtless due to the comparatively short time required to perform the operation, and to the consequent less shock experienced by the patients. In addition to this element of success, the subjects were older, their average age having been seven years, as against four years for those suffering from tumors. Other points in their favor were the slight risk of hemorrhage, and the diminished danger of peritonitis, three of the kidneys having been removed through the loin. In the cases of tumor, on the other hand, the eight deaths followed the ventral method of operating, the fatal issue having been due to septic peritonitis in three, to collapse in four, and hemorrhage in one.

THE OBSTINATE VOMITING OF PREGNANCY.

THE vomiting of pregnancy, although a common affection, has proved as unsatisfactory in theories as in therapeutics. It was formerly called sympathetic, and is now generally known as reflex—we have changed the name, but we have not thus added to our knowledge.

A somewhat curious fact which has been reported at different times, and to which our attention has recently been recalled by a Delaware physician who gives an instance under his own observation, is that the husband as well as the wife may suffer from the so-called morning sickness. This sickness simply results from a mental impression; seeing a person suffering greatly from nausea and vomiting, especially when one has a deep interest in the sufferer, may induce a similar condition in the witness. When one crosses the Channel in a crowded steamer, the passage being rough, and sees the numberless basins provided for the sick, and observes them in such constant use, even though he is ordinarily a good sailor, he may be compelled to confess to some nausea, even if he does not actually vomit.

While the nausea and vomiting of pregnancy prove in the great majority of cases an indisposition rather than a disease, disappearing about the fourth month —in others, obstinate vomiting may result in death. Cases of fatal vomiting in pregnancy are by no means numerous. Guéniot, in 1863, gave only 118, and Kleinwächter more recently refers to the rareness in German literature of simple cases of obstinate vomiting. Nevertheless, the distressing character of the vomiting and the possibility of a fatal result being present in each case, lead us to turn with interest to a paper recently read by Dr. Graily Hewitt before the London Obstetrical Society upon the subject, and the discussion which followed, which may be found in the current London weeklies.

Dr. Hewitt, who is nothing if he be not the chief representative of the mechanical pathology of uterine diseases, brings physical views to explain the obstinate, uncontrollable, or incoercible vomiting of pregnancy. His explanation of the disease is that it results from interference with the normal expansion and growth of the gravid uterus. This interference may arise from incarceration in the bony pelvis of the uterus with version or flexion, or from rigidity and undue hardness of the os and cervix; the former he considers the more important factor.

Of the nine gentlemen participating in the discussion, not one sustained Dr. Hewitt's views in full, and, indeed, only one or two gave them even a partial support. Two of the gentlemen, Drs. Hicks and Bantock, stated that they had never seen uncontrollable vomiting, while, on the other hand, Dr. Matthews Duncan, whose line of thought rarely coincides with that of other men, or who at least sometimes deals in verbal contradictions, stated that "he knew no controllable vomiting of pregnancy." This statement seems to illustrate what Lord Bacon called "an unsteady use of words," confusing the reader.

Dr. Barnes held that the vomiting of pregnancy is "a safety valve for nervous energy, and a safeguard against nervous seizures, such as eclampsia," while Dr. Playfair stated that "it was a neurosis of an intense degree." Neither theory is satisfactory, for a woman prostrated almost unto death by vomiting has no superfluous nervous energy and yet she continues to vomit, and the assertion that the disorder is a neurosis is unproved. Moreover, naming a thing a neurosis does not tell us what it is.

When theories so utterly fail of establishment, and give no clear directions in therapeutics, the majority of practitioners will probably go on in the old way, first treating each case according to its conditions, and then, no obvious local disorder being present, mainly in an empirical way.

Doubtless some patients vomit because the uterus is displaced, and the physician will correct the displacement, if he can. But such cases by no means constitute the majority. In still rarer cases, the disorder may result from rigidity of the cervix, and then the Copeman method of digital dilatation may prove useful; yet we believe that if all the cases in which this method has failed were published, they would far outnumber those in which it has succeeded. Bennet's method of applying nitrate of silver to the cervix, revived by Dr. Sims and by Dr. Jones, may be required in some cases. But when all the patients amenable to these methods of treatment are numbered, the great majority remain for whom we have nothing to offer but empiricism, and we will use one or several of those remedies—such as tincture of nux vomica, small doses of ipecacuanha, or of arsenic, belladonna, morphia, ether spray to the epigastrium, oxygen, etc., possibly even pop-corn or inogluvin—which have proved or been believed useful in other cases of the disorder.

INTERCHANGE OF NERVE FUNCTIONS.

THE subject of the reunion of severed nerves has always been an interesting study to the physiologist, and a very important one to the practising physician. That cut nerve trunks can reunite if possessed of the same function—that is, motor nerves to motor nerves and sensory nerves to sensory nerves—is not now doubted. But all attempts to unite the cut end of a purely sensory nerve to the cut end of a purely motor nerve have failed. Quite recently, however, DR. EDWARD T. REICHERT has repeated these experiments in a modified form, in the laboratory of Prof. Schiff, at Geneva, and his results are published in the *American Journal of the Medical Sciences* for January. His object was to determine whether fibres of nerves of entirely different origin and function, though still motor or sensory, would unite, and should regeneration occur, to ascertain whether a motor nerve was capable of conveying impulses peculiar to another motor nerve, and a sensory nerve impulses peculiar to another sensory nerve. To this end, the vagus and hypoglossal nerves were selected as being of distinct origin and function and as affording the best facilities for observation. Five dogs were prepared by Prof. Schiff by cutting the hypoglossal on one side close to its exit from the cranium, and the vagus at the thyroid gland. The *peripheral* end of the *hypoglossal* was sutured to the *central* end of the *vagus* by a silk thread through the neurilemma.

We have not space to detail the experiments, but the result proved that the motor fibres of the vagus in the five dogs operated upon, united to similar fibres of the hypoglossal, and that the hypoglossal fibres conveyed impulses which were peculiar to the vagus apparatus. They showed, moreover, that in at least one dog, irritation of the sensory fibres in the hypoglossal trunk gave rise to impulses which were conveyed by the sensory fibres of the vagus to the vagus centres, and produced effects like those induced by excitation of the vagus trunk, thus proving in both instances that a motor or sensory nerve can convey impulses peculiar to another motor or sensory nerve of entirely different origin and function. They indicated likewise that, at least in some nerves, the effects produced by impulses from the periphery are not dependent upon any peculiarity of the impulse due to physiological peculiarities of the peripheral sense-organs or nerves, but upon the peculiar physiological properties of the nerve centres. Hence we have respiratory movements, etc., occurring in the tongue, brought about by impulses from the vagus centres through the hypoglossal nerve, and effects on the respiration, pulse, pressure, and vomiting centre through impressions carried to the vagus centres by impulses generated in the hypoglossal.

At least three physiologically distinct sets of motor fibres were united with fibres of the hypoglossal, namely, fibres conveying inspiratory impulses, fibres conveying expiratory impulses, and fibres conveying œsophageal impulses, the first two doubtless consisting of fibres going through the recurrent laryngeal to the muscles of the larynx, and the latter set forming part at least of the fibres belonging to the same branch.

These are very important results, and they prove that the functions, at least of nerves of general sense and motion, are based upon the nerve centres rather than upon peripheral distribution. It will be noted, however, that they do not show that severed motor nerves can be united to severed sensory nerves, but that sensory nerves of one trunk will unite with those of another trunk in a mixed nerve conducting an entirely different sort of sensory impressions from those conducted by the nerve with which the union took place. The same is true of motor nerves.

The experiments also showed that a sensory nerve can be made to conduct impressions in a direction opposite to that in which it originally conducted. Thus the sensory fibres in the trunk of the hypoglossal, at the point of union with the vagus, are recurrent fibres (sensory fibres coming from the superior cervical nerves, through the descending branch of the hypoglossal, and from that branch toward the centre), and, therefore, normally conduct impressions not directly toward the centres, as is usual with sensory nerves, but first peripherally, making a circuit, as it were, before reaching the centres. Since, therefore, the sensory fibres of the hypoglossal, uniting with the sensory fibres in the vagus conducted impressions to the vagus fibres, it is evident that these impressions were conducted in a direction contrary to that of the normal. Thus, too, were confirmed the results of the famous experiment of Paul Bert, who laid bare the back of a rat and a part of the end of the tail, and caused the latter to grow to the former. After union was established, the tail was cut from the body at the root. He now found that when he irritated the end of the tail, formerly the root, the animal gave signs of pain, thus showing that the impression was conveyed in a direction opposite to that of the normal route; or, in other words, that the nerve which formerly conveyed impulses from the end of the tail toward the root, now conveyed impressions in an opposite direction.

GASTROENTEROSTOMY.

IN the *Correspondenzenblatt für Schweizer Aerzte*, for November 1, 1884, may be found the report of what must be regarded as the most remarkable case of gastric surgery that has as yet been recorded. On the 15th of July, 1883, PROF. SOCIN resected the carcinomatous pylorus of a woman, forty-three years of age, who subsequently enjoyed excellent health for upwards of eight months. At the expiration of this time, she began to be troubled with symptoms

of dyspepsia; and on the 23d of May, 1884, a recurrent tumor, adherent to the abdominal wall, the pancreas, and the liver, was discovered. On the 5th of June, gastroenterostomy was practised; the patient made a rapid recovery, and at the end of four months her digestion was excellent, she had slightly gained in weight, and the tumor had only increased in volume.

The establishment of an opening between the jejunum and the stomach, to insure the passage of food into the intestinal canal, and thereby prevent death from starvation in cases in which pylorectomy is contraindicated, has been resorted to at least twelve times for carcinoma of the pylorus, the operators having been Wölfler and Lauenstein, each in two cases, and Billroth, Rydygier, Kocher, Monastyrski, Lücke, Courvoisier, Ransohoff, and Socin, each in one case. Of the twelve, nine, or seventy-five per cent., died; and three, or twenty-five per cent., recovered. Of the recoveries, two were living at the end of four months, and one at the expiration of six months. Rydygier, in March, 1884, had a success in a case of ulcer of the duodenum.

These results indicate that gastroenterostomy is as deadly an operation for carcinoma as is pylorectomy. It has, however, succeeded in prolonging life in one case out of every four, so that the patient may be given the chance if it be desired.

Among the more recent attempts to establish a communication between the stomach and the intestine, is the novel case of Dr. Conner, of Cincinnati, which is recorded in THE MEDICAL NEWS for Nov. 22, 1884. The entire stomach was extirpated "with the hope of attaching the cardiac end to some portion of the intestinal tract, so that the fluids poured out in the upper part of the small intestine might flow down to meet the food, and cause digestion in the part of the intestine where they come together." As the patient died upon the table, the operation was not completed. However feasible it may be, so far as surgical procedures are concerned, we fail to see that, in the event of recovery, it could be of any service, from the fact of the supply of the gastric juice being entirely cut off. Hence, we trust that the operation will not find imitators.

ORIGIN OF BLOOD GLOBULES.

THE origin of blood corpuscles is as fruitful a source of speculation and observation as are the theories of life itself, and is likely to continue so until more positive and direct demonstration is brought to bear upon the processes which underlie it. In our issue for December 6th, we called attention to some observations by Prof. Rindfleisch, based upon a report of two cases in which hæmatoblasts or nucleated red corpuscles were found in the lymphatic glands, which tended to show that the formation of red blood disks is sometimes partly transferred to these glands. Since then we have been informed of other instances of red or raspberry-colored lymphatic glands, and our attention has been called to a paper by DR. A. W. JOHNSTONE, entitled "Experimental and Microscopical Studies on the Origin of the Blood Globules," published in the *Archives of Medicine* for August, 1881, in which he states that red blood disks are to be found in most sections of lymphatic glands, although they are very scanty, and he infers that the formation of a few red blood disks is a normal function of all lymphatic tissues. In a later note to us, Dr. Johnstone suggests that an increased or compensatory function of this kind is assumed by the lymphatic glands in animals which survive the operation of splenectomy, while in other cases it may so far increase, at times, as to become pathological, as in Prof. Rindfleisch's cases.

We have only one suggestion to make with regard to the presence of red blood corpuscles in the normal lymphatic glands. It must be remembered that these glands are vascular, and that in the sections made of them in the fresh state for microscopic study, the little bloodvessels must be cut across, and the blood corpuscles thus escape. Can it be that the red disks which thus escape are sufficient to account for those found in Dr. Johnstone's sections?

REVIEWS.

A MANUAL OF DISEASES OF THE THROAT AND NOSE. By MORELL MACKENZIE, M.D., London. Vol. II. DISEASES OF THE ŒSOPHAGUS, NOSE, AND NASO-PHARYNX. 8vo. pp. 550, Philadelphia: P. Blakiston, Son & Co., 1884.

THE SAME. Pp. 400. New York: William Wood & Co., 1884.

THE present volume—the second—completes a literary labor undertaken by the author some twelve years since, and has followed the first volume after an interval of four years.

In a notice necessarily as brief as the present one we can do little more than congratulate the writer and attest our appreciation of the energy that has dictated midst manifold professional duties the undertaking of such an extensive literary task and of the skill, fidelity, and thoroughness with which it has been accomplished.

The first volume of Dr. Mackenzie's manual was quickly endorsed by the profession upon its intrinsic merits and became widely recognized and accepted as a standard work—not alone on account of the enviable reputation of its author, but likewise for its practical value as a text-book and its utility as a work of reference in the special subjects of which it treated.

The present second volume, modelled on the same general plan as its predecessor, and dealing with the

diseases, etc., of the œsophagus, the nose, and the naso-pharynx, fully sustains both the author's reputation and that of his work. Again, we have presented in compact and readable form the collated results of extensive bibliographical research, the thorough and painstaking compilation of the recognized work of others—and in pointing out this fact we are not unmindful that judicious compilation is an art that is alike necessary and productive of the most useful results—and finally the well-considered expression of a careful, personal study of the subject at issue—all matters being treated in a broad and scientific spirit.

One element alone, we venture to remark, is often lacking, and its omission forces itself upon the attention of the careful reader. The impress of authorship, it is true, everywhere exists throughout the pages, but that of the author's individuality will often be vainly sought for.

Dr. Mackenzie's exceptional experience in observing the diseases with which he deals fully equips him to assume and fufil the *rôle* of teacher, to him and to his published work, the profession, as a matter of right, look for guidance in the matter of this special class of affections.

With undue modesty, however, he too frequently prefers to recount the experiences of others in preference to his own, and the desire of the reader to learn the latter is hence doomed to disappointment.

No more striking commentary on the very rapid advances that are being made in all the departments of the specialty could be found than exists in the very pages before us. Although but a short time has elapsed since the work has left the author's hands, important additions have already been made to our store of knowledge; these are, as a matter of course, not included in the present edition. Notably is this the case in the matter of the pathology and pathological anatomy of the affection termed "hay fever," which is treated of at some length, according to the older views, by the author.

The latter alludes to the never-ceasing work imposed by such frequent modification of views and the constant additions to literature; but after all, in reality, the omissions to which we allude serve only by their infrequency to add additional emphasis to the opinion above expressed as to the general completeness of the work.

As originally planned, and as advertised, Dr. Mackenzie's work was to have included a section on diseases of the neck. This he has been obliged to omit, the sections on diseases of the nose and naso-pharynx having grown under his hands to such dimensions that it has been found impossible to include it and retain the book within reasonable limits. It is promised, however, as to appear shortly in a separate form, as one of the series of "Essays on Throat Diseases," with which the author's name has been long and favorably identified.

It is unnecessary, perhaps, to add that we entertain a high opinion of Dr. Mackenzie's treatise; the more that it is carefully studied, the more valuable will it appear, and the more apparent will become the obligation of both general practitioner and specialist to its distinguished author.

ELEMENTS OF SURGICAL DIAGNOSIS. By A. PEARCE GOULD, Assistant Surgeon to the Middlesex Hospital, London. 12mo. pp. 584. Philadelphia: Henry C. Lea's Son & Co., 1884.

ALTHOUGH issued as a student's manual, this book will be found to be a most useful guide for the hard-worked practitioner. Some parts bear evidence of hasty composition, and a few points are omitted which should have been inserted, but these faults will doubtless be remedied in a future edition, and are more than compensated for by the general excellence of the work in its entirety. Mr. Gould's style is eminently clear and precise, and we can cordially recommend the manual as being the outcome of the efforts of an honest and thoroughly practical surgeon.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, January 15, 1885.

THE PRESIDENT, FORDYCE BARKER, M.D., LL.D., IN THE CHAIR.

THE ANNUAL ELECTION OF OFFICERS

resulted as follows:

President.—Dr. A. Jacobi.

Vice-President.—Dr. C. C. Lee.

Corresponding Secretary.—Dr. L. Elsberg.

Member of the Board of Trustees.—Dr. A. L. Loomis.

Member of the Committee on Admissions.—Dr. A. S. Hunter.

Member of the Committee on Medical Education.—Dr. F. R. Sturgis.

Member of the Committee on Ethics.—Dr. A. H. Smith.

Member of the Committee on Library.—Dr. E. D. Hudson.

ANNUAL REPORTS OF OFFICERS.

The reports of the Council, the Treasurer, the Statistical Secretary, the Board of Trustees, and the Treasurer of the Board of Trustees were read. The report of the last named showed that during the past year $1880 were contributed toward the liquidation of the mortgage on the property of the Academy, thus lessening the annual expenses of the institution by one hundred dollars. A systematic effort is now being made by a special committee having the matter in charge to raise funds to pay off the entire indebtedness, amounting now to only $5000, and there is good reason for supposing that this desirable result will ere long be accomplished.

The report of the Committee on Library, which was read by Dr. John C. Peters, showed that the library of the Academy now contains about 35,000 bound volumes and 9000 pamphlets. During the past year there have been added to it 1278 bound volumes, 1875 pamphlets, and 7814 medical journals.

DEMONSTRATION OF KOCH'S CHOLERA BACILLI.

DR. E. C. WENDT exhibited under the microscope a specimen of the cholera bacillus, which had been sent to him by Dr. Koch. The bacilli were shown under a power of 2000, and in another microscope of 1200 power specimens of bacteria from the mouth were placed on

exhibition. Even with this lower power the difference between those which resembled the cholera bacillus and the genuine cholera microbe were readily distinguishable.

EXHIBITION OF NEW INSTRUMENTS.

DR. N. D. SCHUYLER exhibited an obstetric forceps devised by himself. Its characteristics were a well-marked pelvic curve, a rather short cephalic curve, and shanks which were shortened, closely approximated, and having a decided curve upward. Among the advantages claimed for this instrument are the facility of delivery when the *ostium vagina* was small and when the perineum was very much elevated, as was apt to be the case in primiparæ, and the ability to use it without the necessity of the patients being removed to the edge of the bed.

Dr. Schuyler also exhibited a vaginal speculum, which, he said, possesses the following desirable points: (1) It is easily introduced; (2) when *in situ*, it affords the largest possible field for observation; (3) it is self-retaining and it gives the patient no pain or discomfort; (4) with it the uterus can be fixed and held in a steady position. It is a combination of Sims's, Thomas's modification, and Nott's specula, and consists of a posterior blade, two lateral blades, and a depressor, which also performs the function of an anterior blade. The lateral blades and anterior depressor are worked by levers and held by screws; they move up and down on a standard placed in the handle of the instrument. The posterior blade (Sims) is quite narrow for the first three-fifths of its length, and then gradually widens until it terminates in a stem for the handle and two wings, to which are attached the other blades and depressor. The hard-rubber handle and the anterior depressor are so arranged as to be readily removed. Both instruments are made by Tiemann & Co.

DR. F. A. CASTLE remarked in regard to vaginal specula that the instrument originally designed by the inventor was apt to be greatly modified by the manufacturers. Thus the original speculum of Dr. Nott, which was designed to be used exclusively in the Sims position, was very different in character from that which is now ordinarily sold in the shops under the name of Nott's speculum. The alterations seemed to have been made so that the instrument could be used with the patient on the back.

DR. W. GILL WYLIE read a paper on

DISEASES OF THE FALLOPIAN TUBES; THEIR RELATIONS TO UTERINE DISPLACEMENTS, AND THE USE OF PESSARIES.

The paper being of considerable length, he was obliged, he said, to omit a large portion of it in the reading. He remarked in the outset that while the German authorities had long devoted much attention to the pathology of affections of the Fallopian tubes but little advance had been made in their treatment, until Mr. Lawson Tait had made known his great success in the removal of diseased tubes. Batty and Hegar, as well as Sims, had also, however, contributed to our knowledge of the subject.

Since May, 1883, Dr. Wylie said he had operated in 14 cases; 9 of them being at Bellevue Hospital and 5 in private practice. Of the 14 patients, 12 recovered and 2 died. Both of the latter were hospital cases and both died of septicæmia on the fifth day. Eight of the cases were of pyosalpinx, two of hydrosalpinx, and four of catarrhal diseases of the tubes, with peritoneal adhesions. With five exceptions, the ovaries themselves were also diseased, and attached to the tubes by adhesions.

An increased knowledge of disease of the tubes, he thought, would do much toward clearing up the subject of local peritonitis, which was often erroneously attributed in this country to cellulitis. Retroflexion and lateral versions of the uterus, with adhesions, were also frequently due to salpingitis. When such was the case, it could readily be understood how much injury might result from the use of pessaries under these circumstances. With the light thus thrown on the subject, the mechanical theory of uterine displacements would, he believed, sink into insignificance, and the space which had heretofore been given to it in the text-books would henceforth be devoted to a consideration of the diseases of the Fallopian tubes, with their consequences and treatment.

As to the etiology of these affections, as a rule, they were due to the extension of some pathological process from the lining membrane of the uterus to that of the tubes. In virgins salpingitis was comparatively rare. Gonorrhœa he believed to be a frequent cause of such disease, and in stating his convictions on this point a number of years ago, Dr. Noeggerath had been well in advance of the scientific thought of the profession. Whether he had as yet succeeded in establishing the invariable presence of the gonococci he was not able to state. Among prostitutes the sterility that was so common he thought was accounted for by the frequent existence of salpingitis in this class of women. This sterility, it had been noticed, was apt to continue even after such women had abandoned their evil life and married. When gonorrhœal inflammation reached the endometrium, it was unsafe to resort to local treatment during the acute stage, on account of the danger of producing peritonitis, and the pathological process was exceedingly apt to spread to the Fallopian tubes. The latter often became greatly distended on account of there being a stricture at their proximal extremities.

Other causes of salpingitis were syphilis and septic poisoning after abortion and later at full term. It was now frequent after abortion, because subinvolution and endometritis were more liable to occur after it than after ordinary labor, from the fact that the same precautions were not taken after the former. It had been found that local peritonitis was much more common over the posterior surface of the broad ligaments than over the anterior, and this was undoubtedly due to the fact that the Fallopian tubes opened upon the posterior surface. His experience, Dr. Wylie said, had led him to attach much more importance to localized peritonitis than to cellulitis, and while phlegmons were sometimes met with in the pelvic cellular tissue, he no longer believed in the existence of the so-called chronic cellulitis. Hystero-epilepsy and similar conditions, he thought, were always associated with degeneration of the ovaries accompanied with a catarrhal condition of the Fallopian tubes.

In treating of the symptoms of salpingitis, he omitted a consideration of the subjective manifestations, as there

was nothing to distinguish them from those of other diseased conditions of the pelvic organs. Pain in the iliac region, he remarked in passing, however, was much more marked in pyosalpinx than in other affections of the tubes. As to the objective symptoms, they might not be understood by an inexperienced observer; but they were plain enough to the expert, if he took proper care. It was his own practice to subject his patients to a prolonged course of preparatory treatment, consisting principally of applications of glycerine and alum; and where this had been done, he believed that a positive diagnosis could almost always be made with ease.

For our knowledge of the pathology of salpingitis, he continued, we had to depend entirely on the German writers, who had given a full and accurate account of it. As had been before remarked, the affection was almost always due to an extension of an inflammatory process from the endometrium to the tubes. The manifestation of the diseased action, however, differed in accordance with the difference of the parts in size, shape, and the character of the mucous membrane of each. Moreover, as the tubes could not be reached by local treatment, salpingitis almost always caused a greater or less amount of peritonitis, and almost always became chronic. If it were supposed that the uterus was enlarged and bent backward, and that the tubes were involved in an inflammation extending from the endometrium, it could be seen how lymph pouring out from them into the peritoneum would be likely to produce attacks of peritonitis. As the process went on, the broad ligaments would become rolled up with the tubes, and the ovaries be firmly fixed in them. Under such circumstances the pain produced by pessaries, warned us against their use; but if this was persisted in, there was great danger of causing thereby a rupture of the inflamed tubes, which were usually swollen and filled with infectious matter. If one of the tubes only was affected, it was usually the left.

Having spoken at further length of the surgical pathology and the manner in which the displaced uterus became fixed as a consequence of the salpingitis, Dr. Wylie referred to the treatment in cases with adhesions, where operative interference was not permitted. Instead of attempting to keep the uterus in position by means of pessaries, he said he was satisfied if he could get the organ in a movable condition by restoring the surrounding pelvic tissues to a normal condition, as far as possible. He had succeeded in tapping three cases. One of them was cured by the procedure; but he believed that it was in reality a case of abscess forming in the site of an old hæmatocele. The others were benefited, but not cured, by the tapping; and the only cure for these cases he believed to be the complete removal of the ovary and tube on both sides.

The concluding part of the paper was devoted to the best methods of performing this operation. In opening the abdomen, he believed, it was important that a small incision should be made. It should not ordinarily be longer than three fingers' breadth; which would allow the free use of two fingers. If a larger opening were made, ventral hernia was liable to result, because the abdominal walls had not been previously distended, as was the case when there were large tumors present. It was also important after the removal of the ovaries and tubes to secure perfect apposition of the deep fascia lata. It was his practice to feed his patients solely upon pancreatized milk for a few days before operating upon them, as this had the effect of greatly diminishing the quantity of gas in the intestines and reducing them to such a flaccid condition that they were not likely to interfere with the operation. When the omentum was found to be in the way and held fast by adhesions, he advised that the operator should get two fingers underneath it in one of the fossæ; when the adhesions could easily be separated. No hemorrhage was likely to result from this procedure; but when there was any hemorrhage it came from the omentum, and any vessels could thus be readily ligated if this should be necessary. In order to get at the ovary with facility, it was advisable to elevate the uterus and unroll the convoluted broad ligament.

DR. EMIL NOEGGERATH said that he differed very little from Dr. Wylie in his opinions on this subject; but there were a few points upon which he should like to say a word. In regard to the name, "Tait's operation," it had been clearly shown at the late International Medical Congress at Copenhagen that this was a misnomer, since long before Tait had published his brilliant results (as early as September, 1879), Hegar had reported no less than forty-two cases. Tait's claim to have the operation named after him could, therefore, be based only on the large number of times and the success with which he had performed it; and, he thought, in speaking of this, as well as other operations, it was much better to omit mentioning any name at all, as it was almost always liable to raise the question of priority. Personally, he was of the opinion that most cases of salpingitis were caused by gonorrhœa. He had for a long time been engaged in special studies to demonstrate the presence of gonococci, but had not as yet succeeded. The gonococci was also a diplococcus, and four kinds had been observed in the vagina. The difficulty was that no gelatine had yet been found in which the gonococcus could be raised; since in every preparation that had been tried, they would not grow in the second, third, and fourth generation. After the disease had lasted for several week, the gonococci were found in such small quantity that they could be only raised in gelatine; and, as had just been stated, no gelatine suitable for this purpose had as yet been secured.

As to the relations between salpingitis and the inflammatory processes resulting therefrom, and dislocations of the uterus, he believed that lateral versions combined with anteversion were the distinctive form of displacement dependent on this disorder. Retroversion was met with in exceptional cases, in connection with pyosalpinx and hydrosalpinx; but in the great majority of cases of salpingitis, where the amount of exudation was not extreme, but the uterus was immovable, or only slightly movable, there would be found anteversion with slight lateral version. Retroversion with adhesions was rare in his experience.

In the diagnosis, two varieties were noticed: (1) ordinary salpingitis, with slight secretion, and (2) salpingitis in the later stages with pyo- or hydrosalpinx. It was not necessary to feel the tubes themselves in order to make a diagnosis, since perimetritis without salpingitis was extremely rare. The shape of the tumor, in cases in which this could be made out, was, however, of

great importance. It was, as a rule, divided into three sections, conical in outline and running in the direction of the lateral diameter of the pelvis. As to the treatment in the extreme cases, nothing could be done except to resort to operation; but the large majority of cases were not ready for so radical a procedure, and something else had to be done for them. There was one kind of treatment which was much more successful than any other of which he was aware, and that was a sojourn at Fransensbad, in Bohemia; and he had seen a number of cases which had been practically cured by this, which for years had resisted all sorts of treatment, both in Europe and America.

DR. A. J. C. SKEENE, of Brooklyn, agreed with Dr. Noeggerath that it was a rare thing to see salpingitis, unless it had been produced by gonorrhœa. On the other hand, he differed from Dr. Noeggerath in believing that perimetritis without the tubes being affected was not at all rare. In the matter of diagnosis, he thought it was very difficult to distinguish between an enlarged tube, especially in the condition of hydrosalpinx, and a cystic ovary in Douglas's cul-de-sac. There was one point that had been overlooked, and which he thought was of service in making a diagnosis, and that was aspiration. If ciliated epithelium was so common in pyosalpinx and hydrosalpinx as had been represented, it was only necessary to draw off more fluid and examine it. Out of 21 specimens which he had investigated, the epithelium was found in 18. This raised the question of treatment, and he believed that it was a fact that many cases had been operated on before other measures had been given a fair trial. This he believed to be due to a large extent to Tait's example and success; and he thought that operation should never be resorted to until more conservative means had been thoroughly tried. In pyo- and hydrosalpinx, aspiration might perhaps sometimes result in a cure; the tube not refilling after the fluid had been withdrawn. Aspiration, therefore, he thought might prove useful, both as a means of diagnosis and of treatment.

DR. P. F. MUNDÉ said that ever since the publication of Dr. Noeggerath's article on gonorrhœa, in 1872, and more particularly since Mr. Tait had announced his great success in operating in cases of disease of the Fallopian tubes, he had paid considerable attention to this subject, and especially in regard to the matter of diagnosis. He was, however, not as yet satisfied on this point, and he thought that Dr. Wylie had failed to throw additional light upon it in his paper this evening. In the cases in which it was most needed, it was at present impossible to arrive at a positive diagnosis. In well-marked instances of pyo- and hydrosalpinx, there was not this difficulty, and in such cases he had twice performed aspiration without the subsequent refilling of the tubal sac. The cases in which Dr. Wylie had operated seemed for the most part to be those of the kind in which there were diffuse thickening and infiltration in each broad ligament, with the occurrence of pain and a discharge of purulent matter at irregular intervals. In such cases, he did not see how it was possible to make a positive diagnosis without resorting to laparotomy; and until we could perform this operation with the same success as Tait in England, he thought it was advisable not to attempt it. Under any circumstances, he did not believe that gynecologists would perform laparotomy very often in this condition. In certain instances in which the diagnosis was obscure, but in which the patients were willing to run the risk, he had himself operated, with the result of one death; but it was now his conviction that we were only justified in performing laparotomy in those cases of salpingitis in which a sausage-shaped tumor was present and there was no room for doubt about the diagnosis.

As to displacements, in connection with salpingitis, he believed that retroversion was as common as anteversion, although he agreed with Dr. Noeggerath that in the majority of cases of retroversion the uterus was not bound down by adhesions. In the way of treatment, beyond the use of hot vaginal douches, etc., he did not think there was much to be done except laparotomy in appropriate cases. In a number of instances, however, he had seen considerable benefit derived from the use of the galvanic current, and he advised that it should be applied every other day or perhaps every day for from fifteen to thirty minutes with a battery of from twelve to sixteen cells. By this means the diffuse swelling could sometimes be reduced and the pain suffered by the patient diminished. Still, he did not believe that cases of hydrosalpinx could be cured by this means.

DR. WYLIE, in closing the discussion, remarked that in the reading he had been obliged to omit some of the more important points of his papers for lack of time, and particularly in regard to the preparatory treatment which was often necessary before a correct diagnosis could be arrived at. If Dr. Mundé would adopt this plan, he did not believe that he would have the difficulty in making out the diagnosis of which he had spoken. It was his practice to make applications of glycerine and alum on a thin pledget of cotton two or three times a week, for at least six weeks, and sometimes he kept them up for three months. Then, at the end of this course of preparatory treatment, he was in the habit of putting the patient under ether; when, the thickening of the tissues having been relieved by the glycerine and alum applications, there was usually no difficulty whatever in determining the exact size and shape of the Fallopian tubes. But even if one did not feel positive that the tubes were diseased, there could be little doubt that the ovaries were in an abnormal condition; and he had rarely ever met with disease of these organs without the tubes also being affected. In all the fourteen cases in which he had operated, there was hardly one in which there was not more or less perimetritis. He, therefore, did not feel in doubt in regard to the diagnosis in these cases; and in all the more recent ones in which he had performed laparotomy, he had been enabled to announce to his class the exact condition which would be found on opening the abdomen.

As to aspiration, he had himself employed this; but not in the way that Dr. Skeene had suggested. The simple drawing off of the fluid could not, he believed, cure the patient, because in these cases of salpingitis a pyogenic membrane was formed, which would continue to cause accumulations. Diagnosis by aspiration had been proposed by Dr. Ferguson; but he believed it was safe to follow Tait's admonition, not to tap tumors which are to be operated upon. The cases in

which he had resorted to aspiration were those in which drainage was required. In the matter of displacements of the uterus in connection with salpingitis, his experience went to show that in women who had not borne children anteversion and lateral version were usually met with; but that in those who had borne children, the salpingitis was nearly always associated with retroversion.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION ON A STATE BOARD OF EXAMINERS.

For the Committee on Medical Education, Dr. C. C. Lee reported in regard to a series of resolutions which had been reported to it at the last meeting, recommending that the Academy should urge the passage of a bill by the Legislature providing for the formation of a State Board of Examiners, with power to grant licenses to practise medicine; that in the opinion of the Committee, it was inexpedient that the Academy should adopt such action at the present time.

THE NEW YORK COUNTY MEDICAL ASSOCIATION.

Annual Meeting, January 19, 1885.

THE PRESIDENT, WILLIAM DETMOLD, M.D., IN THE CHAIR.

THE ANNUAL ELECTION OF OFFICERS

resulted as follows:

President.—Dr. Charles A. Leale.

Vice-President.—Dr. Edward G. Janeway.

Recording Secretary.—Dr. P. Brynberg Porter.

Corresponding and Statistical Secretary.—Dr. Charles S. Bull.

Treasurer.—Dr. Whitman V. White.

Member of the Executive Committee.—Dr. William T. White.

THE TREASURER'S REPORT

showed a balance of $511.79 in the treasury.

DISTRICT ASSOCIATIONS.

On motion of DR. J. W. S. GOULEY, the following resolutions were adopted:

Resolved, That the President of the New York County Medical Association appoint a committee of three, with power to increase its number, to take into consideration the propriety and expediency of organizing district associations in New York City, as branches of this Association.

Resolved, That in case this committee should decide to report in favor of the foundation of such district associations, they be authorized to prepare a plan of organization, to be presented to this Association for action at as early a date as practicable.

The Chair appointed on this committee Drs. Gouley and A. Flint, Jr., and empowered them to select the third member of the same. On motion of Dr. A. Flint, Jr., the Secretary was requested to preserve copies of all papers read before the Association, and the discussion thereon published in the medical journals.

ADDRESS OF THE RETIRING PRESIDENT.

DR. DETMOLD, on vacating the Chair, made a few valedictory remarks, in the course of which he spoke of the remarkable success that the Association had achieved in the first year of its existence, which, he said, would forever serve to mark one of the most brilliant events in the medical history of this country. In his own professional career of over fifty years, there was nothing upon which he now looked with so much pride as the fact that he had been selected as the first President of the New York County Medical Association. Finally, he referred to the permanent value of the discussions upon them, requesting, in conclusion, that there might always be a full attendance at the meetings for the encouragement of those who would read papers in the future. Having thanked the members for their courteous indulgence toward him and for their very cordial coöperation in the admirable work of the past year, he bespoke the same for his successor, and then proceeded to introduce

THE PRESIDENT ELECT, DR. LEALE,

who, on taking the Chair, read a brief address, in the course of which he made several suggestions which, he thought, would increase the efficiency of the Association. One of them was, that the transactions of the Society should be published in permanent form. Having referred to the remarkable clinical advantages now afforded in New York, he suggested that reports of special cases would always prove of interest, and expressed the hope that every member would endeavor to contribute his part toward the scientific proceedings, however humble that might be. The suggestion made in the resolutions offered by Dr. Gouley he thought was an excellent one, and he said that he did not doubt that, if practically carried out, it would do a great deal toward increasing the interest in the Association on the part of the profession in all parts of the city.

NEWS ITEMS.

THE MILWAUKEE SCHOOL FOR SURGERY AND ANATOMY.—In view of the fact that large numbers of students of medicine yearly pass through Milwaukee on their way to enter the metropolitan medical schools, and that the majority of them begin their collegiate courses without adequate knowledge of the primary branches of medicine and surgery, and that in the colleges the fundamental principles of the science of medicine are, almost without exception, too little taught, a number of the representative medical men of Milwaukee called a meeting at the residence of Dr. Senn, to discuss the situation. They decided to found in Milwaukee a school of anatomy and surgery, in which the primary branches only of these sciences should be taught.

An association has been organized and duly incorporated under the laws of the State, with the following officers: *President*, Dr. N. Senn; *Secretary*, Dr. Horace M. Brown; *Treasurer*, Dr. Wm. Mackie; *Directors*, Drs. N. Senn, H. M. Brown, Wm. Fox, James Dorland, A. B. Farnham.

Rooms have been secured for the school, and a course of lectures and demonstrations will be commenced about March 1, 1885, to continue for three months from that date.

No diplomas to be considered as licenses to practise medicine will be issued, and it is the object of the school only to furnish to students of medicine the best possible

facilities for acquiring a thorough knowledge of the primary branches of medicine and surgery.

The following gentlemen have been chosen by the Board of Directors to fill the various chairs:

Lecturer on Surgery, Dr. N. Senn.
Lecturer on Military Surgery, Dr. Solon Marks.
Lecturer on Surgical Anatomy, Dr. Wm. Mackie.
Lecturer on Descriptive Anatomy, Dr. Horace M. Brown.
Lecturer on Principles of Medicine, Dr. James Dorland.
Lecturer on Obstetrics, Dr. Robert Herdegen.
Lecturer on Gynecology, Dr. Wm. Fox.
Lecturer on Chemistry, Dr. A. B. Farnham.
Lecturer on Physiology, Dr. J. Bading.
Lecturer on Materia Medica, Dr. H. V. Ogden.

THE PARIS OBSTETRICAL AND GYNECOLOGICAL SOCIETY has just been organized (in Paris), with thirty titular and seventy associates and correspondents. M. Alphonse Guérin is President and M. Charpentier Secretary of the Society.

PROF. JAEGER'S SUCCESSOR.—PROF. FUCHS, of Liège, has been elected to the Chair of Ophthalmology in the University of Vienna. The election has not yet been confirmed, however, by the Minister of Public Instruction.

PORRO'S OPERATION was performed in Imola by Dr. Vincenzo Lesi, in the public hospital, on the evening of October 23d, upon a rachitic woman far advanced in pregnancy. Ten days following the operation, the woman was in good condition and with a temperature almost normal, and gave promise of speedy recovery.—*Gazetta Medica di Torino*, Dec. 1884.

DR. SCHWENINGER AND THE BERLIN MEDICAL FACULTY.—There seems now a slight change of feeling by the public in favor of the faculty. In the higher circles of society, with which the Chancellor's office and Prince Bismarck himself are intimately related, the story has been lately circulated that the Chancellor has had only for a short time any knowledge as to the earlier record of Prof. Schweninger, and that it was a personal insult to the Prime Minister to insinuate that in the light of th s information he had elevated Herr Schweninger.

It is further asserted that the Chancellor has obtained the records of the courts concerning Herr Schweninger, and their perusal has exceedingly shocked him.

Incidental to the false report of Schweninger's appointment to the Ober-Stabsarzt, Bismarck is reported to have said in private circles that in view of the adverse circumstances, he could not understand how any one could imagine that he had appointed him to that body. To these expressions some significance may well be ascribed, though to infer certain victory for the faculty would be premature.

It is also reported that under the advice of his physician—Schweninger—Prince Bismarck will accompany his wife, who is ill, to the South, and that Prof. Schweninger will also go with them. This will be a convenient method of avoiding a distasteful discussion of the "Schweninger affair," which is imminent in the Reichstag. In the meanwhile, it is perplexing the profession in Germany to surmise who will be appointed to the now fatherless chair of dermatology.

THE SUSPENSION OF THE PUBLICATION OF THE INDEX MEDICUS.—We regret extremely to receive the following notice addressed to the subscribers to the *Index Medicus* accompanying the annual *Index* which completes the sixth volume of that publication:

"NOTICE.—With this issue, containing the title-page and annual index of Volume VI., the *Index Medicus* will cease to be published. During its six years' career, it has been supported by its special friends with a generosity perhaps unparalleled in the history of medical journalism. The publisher, the late Mr. Leypoldt, notwithstanding a heavy loss at the outset, and a but slowly diminishing annual deficit, maintained the undertaking with characteristic spirit and zeal. His successors, who are managing his estate and business enterprises, have made strenuous efforts to place the *Index Medicus* on a self-supporting basis, remembering with what particular favor Mr. Leypoldt regarded it. Their latest effort has been unsuccessful, and the few additional subscriptions which were required have not been obtained. The time has come, therefore, when neither zealous friends nor generous publishers can be allowed to make further efforts or sacrifices, and the publication is discontinued. Whether it will in some other shape, or under some other auspices, again appear, is for the future to decide.

"JOHN S. BILLINGS,
"ROBERT FLETCHER,
"Editors."

PROF. HYRTL celebrated, a few days since, his 74th birthday in full mental and bodily vigor. He was, on this occasion, the recipient of many congratulations from his friends, both at home and abroad.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 13 TO JANUARY 19, 1885.

PROMOTIONS.

CAMPBELL, JOHN, *Lieutenant Colonel and Surgeon.*—To be Surgeon with rank of Colonel, December 7, 1884.

ALEXANDER, R. H., *Major and Surgeon.*—To be Surgeon with rank of Lieutenant Colonel, December 7, 1884.

MCELDERRY, HENRY, *Captain and Assistant Surgeon.*—To be Surgeon with rank of Major, December 7, 1884.

APPOINTMENT.

KEAN, JEFFERSON R.—To be Assistant Surgeon with rank of First Lieutenant, December 8, 1884.

BENTLEY, EDWIN, *Major and Surgeon.*—Leave of absence extended two months.—*S. O. 8, A. G. O.*, January 10, 1885.

TREMAINE, W. S., *Major and Surgeon.*—Relieved from duty at Fort Porter, New York.

GIRARD, A. C., *Captain and Assistant Surgeon.*—Ordered for duty at Fort Porter, New York.

APPEL, D. M., *Captain and Assistant Surgeon.*—Ordered for duty at Plattsburg Barracks, New York.

GIRARD, J. B., *Captain and Assistant Surgeon.*—Ordered for duty as Post Surgeon at Fort Schuyler, New York Harbor.

HAVARD, VALERY, *Captain and Assistant Surgeon.*—On being relieved at Fort Schuyler, authorized to avail himself of leave of absence (four months).—*S. O. 8, Department of the East*, January 12, 1885.

ELBREY, F. W., *Captain and Assistant Surgeon.*—Sick-leave still further extended six months on surgeon's certificate of disability.—*S. O. 9, A. G. O.*, January 12, 1885.